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MDCCCXCIX.

University Addresses:

Being Addresses on subjects of Academic Study delivered to the University of Glasgow

By

JOHN CAIRD, D.D., LL.D.

Late Principal and Vice-Chancellor of the University of Glasgow

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slighter and more occasional character, I have printed two specimens at the end of the volume.

The Address for 1897 contains the last words which he was able to speak in public.

EDWARD CAIRD.

BALLIOL COLLEGE,
September 26th, 1898.

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UNIVERSITY ADDRESSES.

THE UNITY OF THE SCIENCES.

November 3, 1874.

In taking leave of you last session, I referred at some length to various incidents that had occurred in the course of the session, and to various changes, past and prospective, affecting the welfare and progress of the University. I shall defer any remarks of a similar kind that might now be made till a like period of the session comes round again, believing, as I do, that I can make a better use of the present opportunity of addressing you, by directing your attention to some object of a more general character, but which, from its relation to your studies, may be supposed to possess some interest for University men. If, in doing so, I trespass a little longer than some would like on your patience, I trust that, as I have not many opportunities of repeating the

offence, I may bespeak, on this occasion, your kind indulgence.

In what respect does a University, as a place of education, differ from other and kindred institutions? What are its peculiar functions? or, if we regard the communication of knowledge as the most important of these, what is that special kind of knowledge which it is its office to communicate? Wherein does the knowledge it teaches, either in itself or as regards the conditions under which it is taught, differ from knowledge acquired elsewhere—in schools, from individual teachers, from books, by private study?

Waiving any discussion as to the historic meaning of the name, it may help us to answer these questions if we say in general, that it is the peculiar function of a University to teach *Science*, or the universal element in human knowledge; and, again, that in bringing together in one institution teachers of the various branches of science, if it does not pretend to embrace all knowledge, it yet further justifies the name of a University, by representing and treating each separate and limited department not as a whole in itself, but in its organic relation to the other branches of knowledge. Preparatory training elsewhere may supply the student with the mere implements of study, may discipline his mental powers into a capacity for scientific culture, and may furnish him with much elementary knowledge in an arbitrary and authoritative

shape; but it is the province of the higher education to bring the mind, by the exercise of its own independent efforts, to the knowledge, not of the net results of inquiry on any subject or class of subjects, but of the principles on which they depend, and the processes which lead to them,—in other words, to enable the student, in every province of investigation, to discern and to acquire the habit of seeking after that which alone constitutes thorough and exhaustive knowledge, —the knowledge of the reality under the mask of appearances, of the principles and laws that underlie the chaos of the senses, the transient and meaningless aspects of the phenomenal world, and the rude generalizations of popular thought. A University, if we may so express it, has for its function the cultivation of the scientific habit of mind—the faculty of grasping the universal element in all human knowledge. And then, as I have said, it has this as a further characteristic, that it visibly represents the systematic or organic unity of the various departments of knowledge, not merely by the juxtaposition in a common seat of learning of the teachers of these departments, but by the subjection of the whole work of education carried on within its halls to a common idea or system; so that each particular subject is seen to have its own place, significance, and value in its relation to the totality of knowledge of which it is a component member. In one word, according to

this view, what lends distinctive significance to the name University is, that it is an institution which teaches, or professes to teach, what is universal in all departments of knowledge, and each separate department in its relation to universal knowledge.

These two aspects of University teaching, however, are, in one point of view, reducible to one and the same. You cannot teach the different departments of knowledge scientifically without showing their relations to each other as parts of one organic whole. To know any one subject thoroughly, you must know many more. The most superficial acquaintance with science, in any of its great provinces, suggests to us by how many links of reciprocal interdependence what we call the particular sciences are connected with each other. The student of biology, for instance, cannot pursue his investigations independently of the researches of the chemist; nor the geologist, or palæontologist, without reference to the results of the inquiries of both, or without taking into account those cosmical phenomena and laws which astronomy unfolds; nor the latter, again, without regard to those researches into optical, electrical, thermal, and other phenomena, which belong to the domain of physical science. The physiologist cannot treat of the phenomena and functions of animal life without regard to the present or past terrestrial conditions under which they exist, or to those laws of

the molecular forces of matter into which, according to some theorists, they are ultimately reducible. How closely, again, many of the physical sciences are connected with, and how much of their advancement they owe to, that great science which deals with the necessary relations of space and number, no one here needs to be told. Whenever any science has reached the point at which its mechanical data can be stated in exact terms of quantity, mathematical science lends to it its all-powerful aid as an instrument of deduction. "The command of geometry over the relations of space, the far-reaching power which symbolic reasoning confers," and the vast success which, in the field of physical science, has attended the employment of both, whether as means of discovery, or in reaping the fruits of discoveries already made, constitute one of the most remarkable points in the history of modern science. These few examples out of many are sufficient to show how closely interwoven many of the various departments of human knowledge are with each other.

But it is not merely in this empirical way that the idea of the correlation of the various departments of scientific knowledge, and the necessity therefore of treating them in connexion with each other, is brought before us. This correlation is implied *in the very idea of science*, and it is that to which the scientific impulse may be said ever to point. Science, in one point of view, is just the search for unity;

the endeavour to reproduce in thought that systematic order, harmony, unity, which we believe to exist in things. The presupposition which is the secret stimulus of intelligence and of the desire for knowledge, is the possibility of finding reason, rational coherence, connexion, system in all things; the conviction that in the whole realm of being, in nature and in man, in matter and spirit, from the least and lowest material object up to the highest intelligence, there can exist no dualism, no contradiction, no contingency, no gap or gulf which it is impossible for thought to bridge; and this is virtually the notion that there is really only one science, of which the various special sciences are but arbitrary divisions or degrees. That, therefore, which the special sciences do, each for that limited group of facts or phenomena with which it deals, a higher science, or science taking a wider field, must seek to do for them. The scientific impulse is not satisfied with leaving the physical sciences in isolation from each other, or these from those which deal with organization and life, or both from that which takes special cognizance of self-conscious mind. It longs to give explicit insight into that continuity, that bond of causation which it implicitly believes to bind, by firmer than iron links, the whole round world together.

The aspiration after unity may indeed, in its ardour, snatch too hastily at results, attempt to forestall the

slow march of discovery, and betray even the most able and trained scientific thinkers into grasping at a premature and false simplicity. The gaps between even sciences of the same order may be too hastily filled up by presumptuous guesses;—as when the evolutionist overleaps the lacunae between different kinds of phenomena, and rashly resolves organization and life into the results of chemical combination. Or, again, the great gulf that seems to ordinary thought to divide the material world from the spiritual, the realm of nature from the realm of mind, may be lightly explained away, by the subjective idealist on the one hand, by the materialist on the other; the former suppressing all objectivity that is not the mere projection of his own individual thought, the latter suppressing all subjectivity that is not the mere function of matter and material organization. Or, to give only one other example, that which has been the grand problem of philosophy, and at which the highest minds of the race have age after age been trying—the relation of the finite to the infinite, of nature and man to God —the vulgar religionist may seem to himself and his compeers to settle by the interjection of a *deus ex machinâ*, an arbitrary anthropomorphic creator outside of the world, fabricating matter and mind after the manner of a maker of machines; not reflecting that arbitrary power or will is but a meaningless phrase substituted for thought, an explanation which,

being itself unthinkable, explains nothing; and that, in having recourse to it, he is only imposing on himself and all others whose intellectual hunger is capable of being appeased by big words.

But though in these and other cases endeavours after scientific unity may prove unsuccessful, the conviction which is their motive is nevertheless the fundamental instinct of science—the conviction that there *is* a unity of principle underlying all diversity and apparent contradiction of things. And, further, though they may fail as yet to attain the result of which they boast, yet are not the efforts of many scientific observers, in our day at least, pointing out to us the direction in which it lies? For, the unity of the world of which they are in search is a unity, not of aggregation or juxtaposition or mere coexistence of component elements, but a unity of *process* or *development*—of a system in which the first and lowest step implies, prophesies, and virtually contains all the successive steps up to the last and highest; and the last is that which presupposes, comprehends, and justifies all that preceded it. If we are ever to get at the true explanation of the world, will it not be one in which there will be no arbitrary leap from one order of existences or of forces to another, but the transition from the mechanical to the chemical, from the inorganic to the organic, from lower to higher forms of life, will, every single step of it, be seen to be that of

intelligible succession and law? May we not hope to see how each lower class of relations prepares for and points to the higher, and the higher as we rise to it is the ever deeper and deeper explanation of the lower? Nor need we be afraid to say that when,—from the highest summit of nature, from organization and life in the most developed of the lower creatures,—we rise to the self-conscious mind that thinks them, here again we shall not find any element of unreason, any dualistic opposition, any arbitrary gap which law and science can never bridge, but a transition which, as we can at least presume now to be, so intelligent insight may yet discern to be, determined by absolute necessity and law. To think thus, as we shall immediately see, is very far from involving a materialistic theory of the universe. But, meantime, we surely need not be restrained by any bugbear of materialism from recognizing in the system of the universe that process of development from the animal to the rational which, as a matter of fact, we see exemplified in each individual life. There was a time in the history of each individual man when he was an existence without sensation, without feeling, without personality, without thought—not merely lower than the higher specimens of brute organisms, but on a level with the very lowest of them. Nor can we say, as we watch the line of development, at what moment of time he rose out of dumb insensibility and uncon-

sciousness, a mere germinating unity of organic forces, into sensibility; or again, at what precise moment the tremendous step was taken by which a self-conscious personality emerged out of the animal, and the mere life of feeling and sensation silently passed into the higher life of thought. But what this individual history brings before us is the fact of a progression without cleft or arbitrary leap, if not from mere material atoms and forces, at least from the animal to the rational, from the highest product of Nature to that which consummates and transcends Nature, the life of self-conscious man. How organization is connected with life and thought, how dumb feeling effloresces into self-consciousness, science may be utterly unable to tell us—and we may add, if it start with the presupposition of the absolute and essential difference of mind and matter, nature and spirit, it never shall be able to tell us. But, at least, the scientific conviction is not chimerical and groundless which assures the observer that the connexion which yet baffles explanation is not an arbitrary one; that, as there is no disharmony, no hard and fast division between the sciences which treat of mechanical forces and those which deal with chemical affinities and combinations, and between these again and the biological sciences so between all of these and the science which passes beyond nature unto the realm of spirit, of ideas, of moral and spiritual intelligence, there is no breach of

systematic continuity, no irrational gap which only arbitrary will can tie together, but intelligible sequence, coherence, correlation. And so we come back to that idea with which we started, and which a great school of learning such as this represents and in some measure realizes,—the idea at once of the diversity and the unity of the sciences. Analysis, abstraction, division, are necessary for knowledge; but we should ever keep in mind that these are only means to a higher synthesis, to the reproduction of a more rich and perfect unity. To the unreflecting mind science may have an aspect of crabbedness and harshness. The abstracting intellect seems to break up the unity and beauty of the world, to divide and dissect and separate part from part, member from member, and to substitute for the inartificial simplicity and harmony which we intuitively recognize in nature, dry and repulsive classifications and abstractions. The soft, rounded symmetry, the spontaneous grace and loveliness, seems to fall away from the fair face and form of nature before the touch of analysis, so that there is left for us only a bare and rigid skeleton, from which the life, the harmony, the unity are gone. But it is not so. The superficial, sensuous unity which science dissolves, it is ever seeking in a deeper way to restore; or rather, its perpetual aim is to give us back, instead of the rude unities of popular observation, the real and profounder unity of thought, of order, of law, of

identity of principle under endless diversities of form and aspect; of relation, process, organic development, beneath seeming disorder and aimless, endless change. And so when we rightly consider the matter, science presents to us no rugged and ungainly aspect, but is radiant with a diviner beauty than meets the eye; and, instead of being "harsh and crabbed, as dull fools suppose," there is no harmony so true, so sweet, as that which falls on the ear and penetrates the soul of her earnest votaries. Follow where she leads with a loyal and indefatigable spirit; and though the path along which she conducts may often seem a rugged and toilsome one, it leads to a region raised above the grosser pleasures, the vulgarizing aims, and the petty distractions of common life. To the domain of science we may apply those lofty words in which Hegel has spoken of that of religion: "It is a region in which the spirit disburdens itself of its finiteness, and relates itself to that which is unlimited and infinite—where its attitude is no longer that of dependence but of freedom, and where the individual has no longer to do with himself, his interests, his vanity, but only with absolute truth. The things which occasion anxiety and doubt, all petty cares and troubles, all narrow and selfish interests, we leave behind us on the sand-bank of time. In this pure region we penetrate through the external, deceitful shows and semblances of the world, and all things become revealed to us,

transfigured in the pure light of truth, and softened in its atmosphere of eternal peace and rest."[1]

To give any detailed illustration of the subject to which I have now referred—the correlation of the various sciences, and their unity as members of one organic whole or system of thought—is beyond the scope of such an address as the present. I will content myself, in the few words I have yet to say, with offering you one or two illustrations of a single branch of the subject—viz., the connexion and reciprocal obligations of the Physical and the Metaphysical sciences—of those sciences, that is, which treat of outward Nature, its phenomena and laws; and those sciences which treat of Thought or Mind, and especially that which deals with its fundamental notions or categories, their genesis and development.

Now, if we ask what is the debt which empirical sciences owe to metaphysics, there are not a few highly able and accomplished men in our day who will tell you that that debt is simply *nil*. Matter and material forces, their conditions and laws, facts and phenomena, their coexistences and successions—with these alone has science to do; and anything beyond that is a mere intrusion of metaphysical fictions into its proper province. So long as we are dealing with the irrefragable data of observation and experience, and with those laws which, as they are

[1] *Philosophie der Religion*, I., s. 5.

only generalizations from experience, can be satisfactorily verified by it, we are on solid ground. But when you attempt to go beyond this—to carry us into speculations about noumena and phenomena, substances and essences, causes, efficient and final, and so forth—you are dragging us into a region to which the methods and tests of experience no longer apply, and from which we derive absolutely no help in explaining it. There are those, too, who will go even further than this, and not content simply with disowning for positive science all aid from the metaphysical sciences—from Logic, Psychology, Philosophy—are disposed to expunge the latter class altogether from the realm of human knowledge. Instead of deriving from the science of ideas any help towards the explanation of nature, any contribution to the physical sciences, they would maintain, with more or less confidence, the doctrine that ideas themselves are but a product of nature; that mind is but a mode, mental activity but a function of matter; or, again, that the principle of the convertibility of force applies to the phenomena of consciousness and thought, in common with those of nature; that, as mechanical force is transformable into chemical, and the latter may be shown, in any given case, to be the exact equivalent of the former, so, in like manner, organic or vital force is but transformed chemical; and, finally, that we only reach another stage of the same process, or manifestation of the same law, when vital

energy is converted into sensation, feeling, and the other phenomena of consciousness. Instead, therefore, of bewildering himself with the baseless and unscientific speculations of the so-called science of metaphysics, what the truly scientific investigator, who would understand the universe in which he is placed, has now to do, is simply, by the sure method of observation and experiment, to trace, in every sphere of inquiry, the manifestations and the transformations of force.

Now, to this tendency to ignore metaphysics, to begin and end with material facts, and to supersede thought and a science of thought, the general answer is that those who try to do so are attempting to perform an impossible feat. You cannot build up a world out of experience without regard to thought and its laws; for, in the very effort, you tacitly presuppose what you are trying to ignore. *You cannot reach mind as an ultimate product of matter and force; for in doing so you have already begun with mind;* the earliest step of the inquiry involves mental forms, and it is only in terms of mind that the problem you are investigating can be so much as stated. Even if you could really start with bare, self-identical, objective facts, stript of every ideal element or contribution from thought, even then you could go no farther, your first step would be your last, you would be no nearer to an ordered world than a loose heap of printer's types is to an epic poem or a scientific treatise. But

you cannot start with such facts. For the least and lowest fact of outward observation is not a bare fact, an independent entity, fact *minus* mind, and out of which mind may be got somehow or other to emerge; but it is fact as it appears to an observing mind, fact as object or in the medium of thought, interpenetrated and suffused with thought, having mind or thought as an inseparable factor of it. Whether there be such a thing as an absolute world outside of thought, whether there be such things as matter and material atoms existing in themselves before any mind begins to perceive or think about them, is not to the purpose. If there be such atoms, at any rate you, before you begin to make anything of them, must think them, and you can never, by thinking about atoms or by thinking about anything, prove that there is no such thing as thought. Before you reach thought as a last result, you would need to eliminate it from the data of the problem with which you start; and that you can never do, any more than you can stand on your own shoulders or outstrip your own shadow.

The fundamental vice, then, of materialism, is that that out of which mind is to be extracted is itself the creation of mind and already involves its existence as an originating power.

This will be rendered still more obvious, if, passing from the general statement of the contradiction, or vicious circle which materialism involves, we illustrate

by one or two examples the share which mind or thought has in those things, or that progressive series of things, out of which it is supposed to be evolved. For, consciously or unconsciously, we are all of us, in our sensible experience, in our ordinary or our scientific observations—in our inductive or deductive reasonings —in our judgments, comparisons, generalizations— clothing outward objects with the forms, and weaving together the rude data of experience into coherent unities and relations, by means of the categories of thought.

The ordinary and unreflecting observer, indeed, seems to himself to be confronted by a world of realities existing apart in themselves, just as he perceives them, and of which he is simply the passive spectator. And all that he knows of them, their solidity, extension, figure, number, weight, measure, distance, their permanent identity, their likenesses and differences, nay, their varied colours, sounds, tastes, etc., are *there*, existing and given in nature, and simply and immediately reflected on the passive mirror of his own consciousness.

The more cultured observer has, of course, got beyond any such blind sensationalism, admitting, as he does and must, that something at least of what ordinary thought ascribes to nature and external objects exists only relatively to the sensibility of the observer. But he, too, not seldom, in a more elabo-

rate though still unconscious way, is betrayed into the same error, of transferring to the phenomenal world or to outward experience what is due to and presupposes the originating power of thought. He will look at the actual world as it is before him. He will accept nothing that is not given by observation and experience. Nothing for him shall have any further import or validity than it can be shown to have from the most careful observation of nature. He will simply record, at most, classify and generalize her facts and phenomena, and have nothing to do with empty abstractions and subjective fictions. Yet here too there is often the same illusion to which I have referred. The empiricist or materialist, while supposing himself to be dealing with hard material facts and experiences, is to be found employing such abstractions as *force*, *law*, *matter*, as if they were on the same level with sensuous things, and intromitting with them in his investigations and reasonings as real entities, immediately given, apart from the activity of thought to which they truly belong. Or, again, whilst contemning all that is supersensible, he is continually using, and cannot advance a single step without using—though often in a hap-hazard and uncritical manner—categories such as unity, multiplicity, identity, difference, cause, effect, substance, properties, etc., which are pure metaphysical creations unconsciously subsumed, without proof or determination, from that realm of

ideas which he ignores or denies. The empiricist, in short, is, and cannot help being, an unconscious metaphysician, the materialist an unconscious spiritualist.

Let me briefly illustrate this. All our knowledge of nature, let it be conceded, is derived from experience. But experience itself depends on something that is not given by sensible experience, and without which it could not exist. I have said that, in one sense, knowledge begins with analysis, takes the unities roughly given in common consciousness or observation and breaks them up by abstraction, so as to reconstruct them in a truer unity, according to their hidden but real relations and laws. But this is only an imperfect account of the process. The analysis with which we seem to start depends on a prior synthesis. It is by our organs of sense that we converse with nature. The utmost, however, which, by this means, we can attain is simply isolated and transient sensations. But isolated sensations are not knowledge. If this were all, our consciousness would be but the stage athwart which flitted an endless series of fugitive impressions, transient, unrelated, incoherent, chasing and obliterating each other, incapable of being arrested, so as to be compared or combined, or of constituting the smallest object of real knowledge, much less of being built up into a solid framework of science. No repetition or reproduction could make these dumb phantoms articulate, for there would be

nothing to give them the capacity of self-identification, the power of reporting or explaining their own recurrence. To do this we must have the presence of some permanent amidst the variable—some unifying, concentrating power amidst this flux of impressions, to reclaim them from chaos, to identify, relate, compare, co-ordinate them into coherent objects of knowledge. And this constant amidst the variable, not given by them, but above them, this unifying power is, and can only be, that spiritual self, that self-conscious Ego, which is not given by sense, which is not in this or that sensation, but common to them all, to which they are each and all referred, and which locks them together in the unity of thought. In one word, to constitute the reality of the outward world, the lowest fraction or minimum of knowledge, nay, the very existence of things, or even of molecules and atoms, you must needs presuppose that thought or thinking Self, which some would persuade us is to be educed or evolved from them.

The existence and originating power of thought, then, is implied, or presupposed, in order to gain even that point of departure for science which is involved in the existence of outward things or facts,—no relations being predicable save of objects that have each a definite identity.

It is only a wider expression of the same synthetic principle when we connect things or facts together, in an ordered system or cosmos, by the notion of Cause

and Effect. The particular sciences are only a following out, deliberately and systematically, of the process by which, at the outset of experience, thought correlates the data of sense.

Interpret nature, we are told, from itself. Never attempt to superinduce your *à priori* conceptions on the facts of experience. What experience gives is always true; anything you add to its facts and realities must be mere subjective fiction. Compare and generalize, if you will, and reproduce, in scientific form, the data presented to you in the outward world; but if you try to read anything into or between them —any mysterious tie of causation or power between the successions of phenomena which observation presents —you are substituting for science a mere metaphysical illusion. Habit may lead you to expect that the same or a similar antecedent will always be followed, as heretofore, by the same or a similar consequent; but this is merely the effect of custom. All that nature contains is simply successions of phenomena; and any mysterious link between them is a pure invention.

I answer, every carefully conducted experiment is a proof that you discern more in nature than mere sensible experience gives—something which is not the mere creation of association or custom, linking together events often observed in succession. For, if this were all, why is it that in a crucial experiment the notion of necessity, or of necessary sequence, is

given the very first time the succession is presented? Why is it that all other and prior experiences of succession inconsistent with this one experience are set aside as delusive; or that, in future, any result different from this that seems, or is alleged, to be given under the same conditions you at once and confidently deny? A single instance in which you know exactly what precedes and follows, suffices to establish necessity of sequence; and it does so because, independent of frequency or custom, you see something more there than arbitrary succession, something more than sense gives or can give: you see the phenomena locked together by the absolute necessity of causation. And, in general, the notion or belief in a uniform order of nature, on which all science rests, is one which is not built up by experience; for it not only presents itself in the case of a single crucial experiment, but it is presupposed in order to any experience, to any one act of scientific observation. For in the very endeavour to account for any change, we imply that it is a change in an order which is by supposition constant; and only because of that presupposition does it require to be accounted for. Alteration that is not referred to what does *not* alter, to an invariable or uniform system, is the alteration of nothing.[1] In

[1] Cf. Green's "General Introduction" to his edition of Hume's *Treatise on Human Nature;* in particular, sections 284 ff.

other words, science, in order to its very existence, rests on an idea, not indeed brought to or superimposed on nature, but perceived in nature, yet which mere sensible experience could never give us—an idea which enables us to rise above experience, and gives unity and permanence to the endless flux of events—the idea, namely, of causation. Reason is seen in nature, because *we* have reason to see it. And so, again, we recur to the principle, that out of nature, of things and forces, of her so-called material realities, you can never evolve thought; for in order to any knowledge of these, nay, as an element of the very existence and essence of these, thought is already presupposed. To make thought a function of matter, is simply, in a round-about way, to make thought a function of itself.

The limits of this Lecture debar me from any further illustration of the principle on which I am insisting. But enough, perhaps, has been said to enable us to see the fallacy which lurks in the attempted proof or suggestion, on physical grounds, of the material origin and nature of mind. "If," writes one of the most eminent of modern biologists—"If the properties of water may properly be said to result from the nature and disposition of its component molecules, I can find no intelligible ground for refusing to say that the properties of protoplasm result from the nature and disposition of its mole-

cules. . . . If (again) the protoplasm of a fungus is essentially identical with, and most readily converted into, that of any animal, I can discover no logical halting-place between the admission that such is the case, and the further conception that all vital action may, with equal propriety, be said to be the result of the molecular forces of the protoplasm which displays it. And, if so, it must be true in the same sense, and to the same extent, that the thoughts to which I am now giving utterance, and your thoughts regarding them, are the expression of molecular changes in the matter of life, which is the source of other vital phenomena."[1] The implied argument here is, that as the phenomena of life may be ultimately resolvable into those of chemical affinity, and these, again, into molecular force; so, and to precisely the same extent, the phenomena of consciousness, sensation, feeling, intelligence, will, may be resolvable into the physical organization of the thinking agent.

But suppose the former steps in this series of transformations were no longer mere conjecture but demonstrated truth, there is an enormous gap between this concession and the final step of the supposed process—namely, the resolution of thought into a result of vital organization. Suppose we accept to the fullest extent the physiologist's account of the matter,

[1] Huxley's *Lay Sermons*, p. 138.

what proof, or scintillation of proof, have we here that organization is prior to thought? Prior to thought it may be, in the sense that neither he nor I, this accidental individuality, would be able to think unless we had a brain and nervous system of a particular structure. But a theory of the physical conditions of thought is not an explanation of the nature and origin of thought itself. In another sense, to say that organization is prior to thought, is to give utterance to a contradiction in terms. Not only is it true, in general, that neither organization nor anything else can have, or be conceived to have, any existence save as thinkable existence; but life and organization, or an organic structure, involve in their very essence a whole host of ideas or categories,—those which I have above discussed, and many others. It is thought, therefore, which is, and must be, prior to them, seeing it enters into their very being and essence. Before the physiologist reaches mind, that out of which mind is to be made, or from which it is to be evolved, is suffused with thought, swimming in an atmosphere of thought. It is possible, indeed, for you, or any one, to observe, and investigate, and experiment about the structure and functions of the human organization, before thinking about mind or ideas, or without ever thinking about them at all; but that is saying no more than when you say that a man may walk without studying anatomy, or eat and drink without thinking

about his digestive and nutritive organs. It is not the less true that every step he takes, and every morsel he eats, implies the existence and activity of the physical organs concerned in the process. And so the unconscious use of ideas, categories, reason, intelligence, is no disproof, but the reverse, of the priority of thought. It is only a proof that, in the steps of the rational process, or in the stages of that education through which each human spirit passes in order to the attainment of knowledge, thought must begin to live in the outward world before it falls back on itself. The dream-life of childhood, in which mind wanders abroad, and lives a mere life of objectivity and self-estrangement, must precede the conscious life of intellectual manhood. We must, and do, think objects of thought before we think the mind that thinks them: but any way, consciously or unconsciously, that which thinks the outward is prior to the outward. Thought cannot be the function of organization or of anything else in the universe, for it is the *prius* of organization and of all things.

I have taxed your patience too long with this somewhat dry discussion; and in what I have said I have not even touched on the question as to the bearing of the views I have attempted to criticise in the province of religion and theology. On this subject it is, of course, at present impossible to enter. But I will hazard on it a single remark in

conclusion. I have spoken of the priority of thought or mind to matter. But the priority I have claimed for it is not, and cannot be, that of your individual thought or mine. In the case of the individual, finite thinker, that is not first which is spiritual, but that which is natural. A great poet has said that "in *our* life does nature live." But it is not so. There was a time when our thought was not; and the world and all that is therein, the round ocean, the living air, the blue sky, the fair and wondrous order of nature, would be as real and as fair though we, and myriads such as we, were not here to perceive and know it. But though nature lives not in our life, what I have said as to the priority of thought to nature is still not the less true. Nay, just because it is not true of your thought or mine, the principle contains in it the strongest, the deepest, the one irrefragable proof of the existence of a thought, a mind which is before and beyond all finite thought, or rather with reference to which the words "before" and "after" have no longer any meaning—the one eternal thought on which all being and all knowing rest. And this, as it is the surest proof of the existence, is also that which gives to us the grandest conception of the nature of God. The distinguished representatives of modern scientific thought, to whom I have above referred, have denied—and who shall presume to question the sincerity of their denial?—that the tendency of their doctrines is

atheistic. But the only conception of God, of which, avowedly, their speculations admit, is a God outside of knowledge, the dark impenetrable back-ground of the phenomenal world, our only relation to whom is not intelligent admiration or love, but simply that awe and submission we feel before the unknown and the unknowable. The object of religion, we are told, is "the mystery from which we have emerged, and which each succeeding age is free to fashion in accordance with its own needs."[1] "It will be wise," we are advised, "to recognize the various religions of the world as the forms of a force, mischievous if permitted to intrude on the region of knowledge over which it holds no command, but capable of being guided to noble issues in the region of emotion."[2] But, if this be the only God to whom science points, and with the notion of whom it proposes to meet and satisfy the infinite aspirations and inextinguishable longings of the spirit of man, the boon it brings is one for which I, for one, cannot pay it the poor tribute of my gratitude. I cannot bow before this blank inscrutability, of whom you help me neither to affirm nor deny anything, and for whom, therefore, I can feel no rational reverence. I cannot, will not, submit my will to that of which I know, and can know, nothing, of which, or of whom, I cannot tell whether, if I did know him, the proper

[1] Tyndall's *Address to the British Association*, p. 61.
[2] *Ibid.*, p. 61.

attitude might not be—not love and veneration and obedience—but resistance and abhorrence. Not such is the God to whom the principle I have imperfectly illustrated points—not a Being who is banished beyond the bright domain of intelligence, but one who is Himself the light of all our seeing, the Infinite Thought which, though it transcends all thinking things, all objects of all thought, reveals itself in all that human thought can grasp, and discloses itself more and more fully with every step in the advance of human intelligence. The God of whom we can thus conceive is no blank mystery, no veiled divinity on whose face the eye of human intelligence can never rest, with whom the conscious spirit of man can hold no communion. It is not left us, as the highest attitude of our religious nature, after we have found noblest intellectual satisfaction in tracing back to their farthest sequences the phenomena and laws of this fair and ordered world, to stand dumb and silent before that portentous veil which for ever wraps the invisible from our view, and to say, "Behind that—perhaps—is God; you can never see Him, never know Him, but fancy and imagination may disport themselves at their own wayward will in shaping out fantastic notions of Him, all alike erroneous and illusive." It is some reward of a truer speculation if it enables us to put away this phantom of nescience, and to think God as the God of truth and science, the

Being whose dwelling place is not thick darkness, but wherever knowledge sheds its kindly light over the paths of men—whom every true thought, every fresh discovery, every idea of the wise, and every intuition of the good, are helping us to know more fully—the Being, in one word, who is Himself the Truth, absolute and inexhaustible, after which the greatest of the sons of men have sought with a thirst that is unquenchable, and which, when they have in any measure grasped it, is the crown and consummation of their efforts.

THE PROGRESSIVENESS OF THE SCIENCES.

November 2, 1875.

LAST session the topic on which I took leave to address you was "the Unity of the Sciences,"—the relation, that is, of the various departments of knowledge to each other as parts of one organic whole. It may be said to be the peculiar function of a University to teach *science*, or the universal element in human knowledge; and, again, University teaching has this as a further characteristic of it, that it visibly represents the systematic unity of the various departments of knowledge, not merely by the juxtaposition of their teachers in a common seat of learning, but by the subjection of the whole work of education carried on within its walls to a common idea or system. In short, what according to this view lends distinctive significance to the name University is, that it is an institution which teaches, or professes to teach, what is universal in all departments of knowledge, and each separate department in its relation to universal knowledge.

It is to another characteristic of the sciences, which concerns us no less than their unity, that I purpose to-day, for a few minutes, to direct your attention—I mean, their *progressiveness*. The history of human knowledge is a history, on the whole, of a continuous and ever-accelerating progress. In some of its departments this characteristic may be more marked and capable of easier illustration than in others. External accidents, affecting the history of nations, may often have disturbed or arrested the onward movement, or, even for a time, seem to have altogether obliterated the accumulated results of the thought of the past. But on the whole the law is a constant one, which constitutes each succeeding age the inheritor of the intellectual wealth of all preceding ages, and makes it its high vocation to hand on the heritage it has received, enriched by its own contributions, to that which comes after. In almost every department of knowledge the modern student begins where innumerable minds have been long at work, and with the results of the observation, the experience, the thought and speculation of the past to help him. If the field of knowledge were limited, this, indeed, would, in one point of view, be a discouraging thought; for we should in that case be only as gleaners coming in at the close of the day to gather up the few scanty ears that had been left, where other labourers had reaped the substantial fruits of the soil. But, so far from

that, vast and varied as that body of knowledge which is the result of past research may seem to be, the human race may, without exaggeration, be said to have only entered on its labours, to have gathered in only the first fruits of a field which stretches away interminably before it.

Now it is this condition or characteristic of human knowledge, which constitutes the inspiration and the ever present stimulus of intellectual effort. Without its quickening influence, thought and research would lose half their charm. If we cannot assent to the paradoxical notion of some thinkers that the chief value of knowledge is not in the possession, but in the pursuit of it; if there are few who would endorse the well-known saying of Malebranche, "If I held truth captive in my hand, I should open my hand and let it fly, in order that I might pursue it again"; yet this much may be conceded, that the known, the mastered and established facts of knowledge, derive a great part of their value from their relation to the unknown and the undiscovered. As we review the history of science, we are impressed by the fact that the greatest discoveries, however important in themselves as a contribution to human knowledge, have been incalculably more important, as stepping-stones to subsequent and still greater advances. And we in turn, in our day, feel in our intellectual labours the power of the future pressing on us. It is the new

hopes that are ever arising in us in the search after truth; it is the stir of unresting endeavour, the impossibility of stationariness or stagnation, the excitement of enquiry, the wonder and delight of new ideas, of the world of thought breaking upon us with the ever-unabated charm of novelty; it is the sense of ever-growing power, the ever-increasing amount of our intellectual possessions, and prophetic glimpses of richer, yet still unappropriated, treasures that lie beyond us; it is, in short, this atmosphere of progressiveness which lends a peculiar interest and attractiveness to the vocation of the student and the searcher after truth. To few, indeed, is it given to be great discoverers or original thinkers, to know, by experience, the delight of the mind on which some great result of thought or investigation—a new law of nature, or speculative principle, or conception of creative imagination in the realm of art—comes, now, perhaps, dimly foreshadowed, now shaping itself into dawning, deepening fulness and distinctness of outline, at length grasped with the firm sense of realized certainty of possession. But though this peculiar experience is that only of the few, we can all, at least at second hand, share in the stimulus which the thoughts and discoveries of the higher and more gifted minds afford; and the humblest labourer in the field of science may feel himself partaking in the common movement, and in the intellectual activity of his own mind responding

to the unresting activity which pervades the world of thought.

The immediate duty, it is true, of the great majority of those whom I address is that, not of discoverers, but of learners. Whether in future years it shall be given to any of us to rise to the rank of original thinkers or investigators, or we must be content to belong, at best, to that of the receptive and transmitting order, to whom is allotted the humbler office of being the conductors or interpreters of thought to the common mind,—in the meantime, at least, our work is to gain, by the aid of skilful teachers, some acquaintance in various directions with the extant body of knowledge, with the languages and literature of the past, with the facts and principles concerning the outward world of nature or the inner world of mind which have been found out and established. But even here, in this our proper vocation of students and learners, we may and do get the benefit indirectly of that spirit of progressiveness which is the life of science. If not immediately acting on your own minds, it acts on you through your teachers. Though not directly controlling your own aims and enquiries, it is reflected upon you in the intellectual atmosphere in which you daily breathe, in the living power and influence which ever penetrates the instructions of a teacher who is abreast with his science and seeking by his own investigations to contribute to its progress. Universities, especially

Universities constituted as our Scottish Universities are, are places where a body of men are, for the most part, withdrawn from all other work but that of study and thought—men to whom knowledge is a profession, with ample leisure for prolonged enquiry, each in his special department, and a command of the best appliances for private research. Such places ought to be, and I am happy to think that our Universities have generally been, centres of intellectual activity. Seldom, if ever, have their professors been content to be mere routine teachers of stock ideas or transmitters of accepted traditions; generally they have added to the function of communicating, the other and higher function of extending the bounds of knowledge. I need not recall the names of Scottish professors whose contributions to literature and science and philosophy have given an impulse to the thought of former times; nor is the ancient fame of this University in our own day likely to suffer for lack of productive activity on the part of its teachers.

Now, what for my present purpose I wish to say with reference to this fact is, that though the function of the original thinker and investigator and that of the teacher are distinct, yet the latter ever derives from the former a great access of power—a power which, in the most elementary work of the class-room, will be sure to tell. It is not merely that the daily presence of a man eminent in the department

he teaches has an insensible influence on the minds of the students which *he* can never exert who works merely from hand to mouth, knowing little more of his science than he daily doles out to his pupils; it is that the man who speaks from a full mind, with a complete mastery of his subject and a genuine enthusiasm for its advancement, whose own powers are kept at their highest tension by original and exhaustive enquiry, will infuse into the ordinary routine of instruction a spirit and life, a freshness and ardour, which a commonplace mind can never communicate. It is, in one word, that the teaching of such a mind will transmit to other minds that with which it is itself penetrated—the power of that progressive spirit which is the life of science.

But now, passing from these general considerations, is it in point of fact true, it may be asked, that progressiveness is the universal characteristic of human knowledge? Are there not departments of study in which the productions that approach nearest to perfection are to be found, not in the present, but in the past, so that nothing is left to succeeding ages but to endeavour to imitate those exquisite works of the genius of antiquity which they can never hope to excel? Are there not again, it may be asked, some subjects with respect to which experience proves that the mind of man can make little or no advancement beyond the point reached at a very early period by one or two

master minds of ancient times; and others in which the period of greatest illumination for the human mind was more than eighteen centuries ago, nay, in which the very organ of knowledge has for ages been an unused faculty, and wisdom at this entrance quite shut out? If we look only to the domain of the physical sciences, we see that here modern times are at an immense distance in advance of ancient; and there are obvious reasons on which we may base the conviction that the progress of these sciences will be still greater and more rapid in the future. As the number of observers increases and, with that, the possibility of the subdivision, comparison, and correctness of observation; as methods of investigation improve, and the application of science to the mechanical arts leads to the construction of instruments more delicate and incalculably adding to the power of observation; and still more significantly, as province after province of science is reduced to a condition of generalization, to which mathematical processes of reasoning can be applied; it is impossible that man's knowledge of the inexhaustible realm of nature should not go on in an ever-increasing ratio.

But, whilst from these and other causes, in the domain of Physical Science, each successive generation is surely destined to advance by rapid strides on the attainments of its predecessors; there are other departments of mental activity, in which neither experience

nor the reason of the thing, it may be said, leads us to look for the same progressiveness. Can we ascribe it to the same extent, or indeed at all, to Literature and Art, to Philosophy, to Theology? Is it to modern or ancient times that we look for the most perfect masterpieces of purely literary art? Has language ever afforded a medium of expression, at once so varied and so accurate, so subtle and refined, lending itself with such infinite flexibility to the most delicate distinctions of thought, and to the endlessly diversified tones of feeling and fancy, clothing with aptest forms the severe dialectic of philosophy, and the impassioned inspirations of epic or dramatic genius—has language ever afforded a more perfect instrument of thought than that which, though dead, yet speaks to us from the lips of the orators and poets, the historians and philosophers of ancient Greece? Not to speak of their historic value, or of the substantive excellence of their contents, when we wish to place before the student of our day models of finished and faultless excellence in form and expression, examples by which he can be trained in the principles that regulate the formation and structure of language, the precise and accurate use of words, the delicacies of style, the simplicity, the terse conciseness, the measured rhythmical sweetness, the elevated grandeur. the sustained force and vivacity of which human speech is capable,—is it not the fact that we pass by

all the treasures of modern literature, to put into his hands, and bid him spend laborious days and nights in mastering and appreciating, the works of the great writers of classical antiquity? And the same observation applies to some extent also to ancient art in general. Are not the remains of Greek sculpture and architecture the envy and the despair of modern artists? Is not much, at least, of modern art only an endeavour to reproduce with laborious imitation the lines and forms of those works which were flung forth, with the spontaneous ease and exuberance of genius, from the creative spirit of Greek and Roman art?

If, again, we turn from Art to Philosophy, to some it would seem as if here too we have an exception to the alleged progressiveness of human knowledge. To outsiders at least, it will be said, it looks as if not much has ever come of metaphysical speculation. Is not the history of speculative thought, it may be asked, a record of endless motion without advancement? In each successive age do we not find the old divisions and controversies reproduced without apparently any nearer approach to definite results? Are not philosophers still disputing about the same questions on which Plato and Aristotle thought and reasoned? Idealism and empiricism, materialism and spiritualism, dogmatism and scepticism, utilitarianism and intuitionalism—do not these various schools of thought find their advocates in modern times, each as eager and

earnest, as thoroughly convinced of the absolute and exclusive truth of his own standpoint, as the representatives of the same schools in all past times? And if there be any one school that is, more than another, the fashion of our day, that can claim a wider consensus of opinion than others, is there not a strange irony in the fact that it is a school which makes it the business of philosophy to prove that philosophy is an impossibility, that the necessary limits of human thought preclude all knowledge of the supersensible, and that the attempt to grasp absolute truth is a delirium or a dream?

Now, however plausible such representations may sound to the popular ear, I think it would not be difficult to show that they are fallacious and superficial. Neither Art nor Philosophy, nor, I will add, Theology, constitutes any exception to that law of progress which conditions all human knowledge. That I may not trespass too far on your indulgence, I will leave over for the present what might be said on Art and on the still more delicate and perilous subject of Theology, and in the few minutes that remain to me, confining myself to only one of the above-named departments, I shall try very briefly to show that the much maligned science of Philosophy can justly claim to be a progressive science.

The doubt or denial of this claim, whether tacit or avowed, is grounded, as I have just said, on the never-

ending succession of opinions and systems issuing in no definite and universally established results, which seems to characterize the history of metaphysical speculation. Each new system purports to have reached the secret of the universe, and denounces all previous explanations as futile. Yet each in turn, after attracting more or less attention, meets the universal fate—succumbs to some newer, yet equally transient attempt to construct a perfect philosophy. Where then, in this restless flux of opinion, can we discern any sign of definite progress? Amidst the diversity and conflict of systems, how shall a plain and unsophisticated enquirer determine which is true, or whether the pretensions of the last and newest system are better grounded than any of those which it claims to supersede?

Now, in the first place, I think it necessary to remark, that a plain and unsophisticated observer is not, in this case, a competent judge. Whether Philosophy has progressed or not, whether beneath the appearance of incessant change there has been a silent and steady advance of thought, is a question which cannot be determined by outsiders. In no case, indeed, can science be adequately appreciated from without; but of all branches of science, Philosophy can least suffer its acquisitions to be tested by external criticism. In the case of the physical sciences or the mechanical arts, dealing as they do with

sensible facts, or appealing to results bearing on the outward utilities of life, there is a possibility, up to a certain point, of progress being tested and recognized by the popular mind. But Philosophy has its peculiar domain in a region altogether remote from popular observation, in the region of thought, of ideas, of the ultimate and invisible principles of things. Its objects are not discerned by the senses, capable of being represented to the imagination, or realized by the natural shrewdness or ordinary good sense of the world. It demands for its prosecution a power of abstraction, of generalization, of speculative insight, which is not given to all; and an intellectual self-restraint, and superiority to outward illusions, which few are capable of yielding to it. Strait is the gate and narrow is the way that leads to this kingdom, and few there be that find it. Yet, it would seem as if, even more than the other sciences, Philosophy is expected to make its results palpable to the ordinary and unscientific mind—to stand and be judged by that generalization of common ignorance which we designate "common sense." Common sense is never allowed to sit in judgment on mathematical investigations, on a process involving delicate experimental analysis, on the correctness of a medical diagnosis, on a question of comparative philology or ethnology. In these cases uninstructed shrewdness is not offended to find that the language of

science is to it unintelligible, its methods and processes an utter blank. Yet ordinary intelligence is somehow supposed to be quite adequate to the work of estimating the methods and results of a science, the most recondite of all; takes upon it to flout at what it calls the jargon of metaphysics, and is credited with wisdom in treating the results of speculative research as empty words.

Again, it is to be remarked that, owing to the remoteness of philosophy from ordinary thought, there is another difficulty with which it has to contend, and a further hindrance to the recognition of its substantial results. Here, more than elsewhere, science is subjected to the presence of impostors, whilst here it is less easy than elsewhere to detect and expose them. There are many who give themselves the air of metaphysicians and psychologists with whom philosophy has nothing to do, yet the discredit of whose crudenesses and absurdities, in the general judgment, philosophy is often made to bear. All sciences, indeed, are more or less exposed to the intrusion of pretenders and charlatans; and in science, no more than in any other sphere of human activity, is it possible to prevent, occasionally, an element of nonsense from creeping in. But this is an evil which, from the nature of the thing, is more common in philosophy than anywhere else. For, though its province is in one sense remote, in another it is near and familiar.

Though not many can grasp it, all, or almost all, can talk about it. It deals with mind, with ideas, with the principles and processes of thought; and everybody has in his possession, at least implicitly, the subject matter with which it concerns itself: everybody has, or thinks he has, a mind and ideas. And so, mistaking the familiar for the intelligible, without science, culture, or discipline, multitudes who are shut out by conscious ignorance from other sciences, have thought themselves entitled to rush into this field. The literature of philosophy is thus exceptionally beset by extravagances and vagaries, by crude observations, ill-sifted notions, and baseless theories—in short, by the element of nonsense. From which it arises that people who have no liking for the subject, or who have caught up a prejudice against it, find ready to their hands a thousand illustrations of the uselessness and unprofitableness of metaphysics. But surely, if we would estimate the true value and solid results of philosophy, we should begin by brushing off this foreign and parasitical element. If controversies about the squaring of the circle or the perpetual motion are not to be set down to the discredit of mathematical or mechanical science; if the pseudo-science of Astrology or the dreams of alchemists and Rosicrucians are not suffered to abate our respect for the sober investigations of Astronomy or Chemistry, why should a like careful discrimination not be made

when we come to consider what is or is not included in that body of truth for which philosophy is responsible? The history of philosophy is indeed rife with conflicts and controversies; but the senseless quarrels of camp followers and hangers-on have no bearing on the great controversies of nations, nor even on the issue of a single campaign.

But though it is impossible outside of Philosophy to demonstrate its reality and its progress—though, in other words, it is only a knowledge of philosophy that can qualify us for appreciating its progressive character; yet, waiving for the present other points, there is one general consideration with respect to the history of this science which, even without this deeper knowledge, may help us to see how there may be real progress here despite that appearance of fluctuation, that absence of settled results, to which I have referred. And that consideration is simply this, that the highest kind of progress is not progress by addition or accumulation, but progress by *development*, and development implies the perpetual transmutation of the past. There is one kind of progress which consists simply of addition of the same to the same, or of the external accumulation of materials. But increase by addition, even though it be ordered or regulated addition, is not the highest kind of advancement. Pile heap on heap of inorganic matter, and you have a result in which nothing

is changed; the lowest stratum of the pile remains to the last what it was at the first, and you keep all you ever had in solid permanence. Add stone to stone or brick to brick, till the house you have built stands complete from foundation to copestone; and here, though in order and system there may be a shadow of something higher than mere quantity, there is still only addition without progress. You have here also what the superficial mind covets as the sign of value in its possessions—permanent results, solid and stable reality. Every stone you place there remains to the last cut, hewn, shaped, in all its hard external actuality, what it was at the first: and the whole edifice, in its definite outward completeness stands, it may be, for ages, a permanent possession of the world.

But when you turn from inorganic accumulation or addition of quantities to organic growth, the kind of progress you get is altogether different. Here you never for a single day or hour keep firm possession of what you once had. Here there is never-resting mutation. What you now have is no sooner reached than it begins to slip away from your grasp. One form of existence comes into being only to be abolished and obliterated by that which succeeds it. Seed or germ, peeping bud, rising stem, leaf and blossom, flower and fruit, are things that do not continue side by side as part of a permanent store,

but each owes its present existence to the annulling of that which was before. You cannot possess at one and the same time the tender grace of the vernal woods and the rich profusion of colour and blossom of the later growth of summer. If you are ever to gather in the fruit, you must be content that the gay blossoms should shrivel up and drop away. Yet though, in organic development you cannot retain the past, it is not destroyed or annihilated. In a deeper way than by actual matter-of-fact presence and preservation, it continues. Each present phase of the living organism has in it the vital result of all that it has been. The past is gone, but the organism could not have become what it is without the past. Every bygone moment of its existence still lives in it, and indeed as it was, but absorbed, transformed, worked up into the essence of its new and higher being. And when the perfection of the organism is reached, the unity of the perfectly developed life is one which gathers up into itself, not by juxtaposition or summation, but in a much subtler way, the concentrated results of all its bygone history. And by how much life is nobler than dead matter, by so much are the results and fruits of life the manifestation of a nobler kind of progress than the accumulation of things which are at once permanent and lifeless, and permanent *because* they are lifeless.

Now, the claim of philosophy—a claim asserted by its greatest modern representatives—is that the history of speculative thought, like the whole history of man of which it is the highest form and expression, is not an accidental succession of opinions, but a development—the evolution through definite stages of an ever-growing organic life. Philosophy does not advance by mere empirical addition of fact to fact, and opinion to opinion; its history is that of a process, a systematic development, each step of which, though true, is not the absolute truth, and therefore yields to and is taken up into another and higher in the dialectic movement of the thought of the world. And, as in the process of physical life, each successive phase and form, though it seems to be the subversion, is only the deeper realization of that which preceded it. The first step, like the germ, contains ideally and implicitly the whole subsequent development; and the last, in the fulness and riches of its life, absorbs and explains, is in itself the truth and realization of all that seems to have passed away.

The attempts, for instance, at the first awakening of speculative thought in Greek philosophy, to explain the world by such notions as Being, Becoming, the One, the Many, etc., might seem to have lost any other than a historic or antiquarian interest. But even the ripest and most advanced philosophy of modern times has not refuted or falsified these notions of its earliest

infancy. For the categories which seemed to these early thinkers the ultimate principles of things, do actually enter into the system of the world, and must enter into any rational explanation of it which our latest thought can give. They are the notions with which every philosophy must begin, and they are only false when we stop short at such abstractions, instead of regarding them as only the first faint notes of that rhythmical harmony of thought into which they have long been taken up. And even in these first beginnings of speculation we already see the process at work by which one philosophy, while seeming to be subverted, yet really passes into and yields up its life to another. "All is Being," is the formula which expresses one and perhaps the earliest, definite attempt to read the secret of the universe. "Change, division, multiplicity, are but surface appearance and illusion. There must be one permanent principle or ground of things, and all other experiences that seem to be, are but phantoms." "All is Becoming," was the seemingly contradictory explanation of another and later school. "Nothing in the universe continues for two successive moments, but restless movement, mutation, fleetingness, an eternal alternation of birth and decay, life and death,—*that* alone is. The permanent is the illusory—what is, only seems to be; the real principle of things is to be found not in the idea of Being, but of

Becoming." And both explanations were true; both principles needed to rise, and have their day, and play themselves out to the fullest, before thought, obeying its own inward impulse, rose to a higher principle which at once superseded and embraced them—a principle which includes both change and permanence, unity and difference; which sees not the one only, or the many only, not the particular, the manifold, apart from the universal, nor the universal apart from the particular, but a universal which is *in* the particular, a world which is neither in abstraction, but both ever coincident, ever blended, ever reciprocally interpenetrated in the concrete unity of thought and life.

And so, in like manner, at another and far distant time, when a deeper problem arose for solution, the problem of matter and mind, of the world without, and its relation to the world within, it would be easy to show how, beginning with the hard opposition of the two, speculation first playing with metaphorical solutions, such as that of a mental tablet on which impressions are inscribed from without, sought on the one hand the explanation of materialism; on the other, by necessary reaction, that of false or subjective idealism, till the truth in both was taken up, and the error eliminated in a deeper philosophy, which says, "Both are true, but neither in abstraction from the other. Neither materialism in itself, nor idealism in itself, neither bare objectivity, nor bare subjectivity;

but the secret is to be found in that deeper concrete unity in which they are both lost and found again—the unity of self-conscious thought."

Thus, not to weary you with further illustration, what has been said may, at least in some faint measure, suggest to you a view which removes from the history of philosophy that aspect of chaos and perpetual contradiction issuing in no progressive knowledge which has been so often urged against it. There is much, as I have already said, in the history of speculative thought just as in the outward life of man, that belongs to the accidental and irrational—errors, vagaries, paradoxes, assuming the name and the guise of philosophy. But just as the student of the constitutional history of England can trace, amidst all the complexity and contingency of outward and passing events, through successive times and dynasties, underneath the waywardness of individual passion and the struggle for ascendancy of classes and orders,—the silent, steady development of that system of ordered freedom which we name the Constitution of England; so, in the light of the principle I have attempted to set forth, looking back on the course which human thought has travelled, we shall be at no loss to discern beneath the surface changes of opinions, unaffected by the abnormal displays of individual folly and unreason, the traces of a continuous, onward movement of mind. It is one

thought, one mind, and spirit which has lived and thought through the ages. The intellectual life of the world is the intellectual life of the individual mind writ large. It is not dwarfed in perpetual childhood. It has grown from less to more; and the rich content of its present thought is no chance-medley of opinions, but the legitimate and logical outcome of all the thought of the past.

And now let me ask in conclusion, is there not, in the idea I have imperfectly presented to you, that which should have a stimulating and ennobling influence on us in our vocation of students? Should it not help to lift us above ourselves, our petty individual aims, our narrow and selfish desires, to feel that we are sharers in a life which is infinitely larger and greater than our own—the ever-advancing intellectual life of man. The pursuit of knowledge is at once a humbling and ennobling work—humbling, because it is so little we individually can accomplish within the narrow limits of our brief and passing life; but ennobling, because no earnest seeker after truth, but, by the very nature and law of his vocation, enters into communion with the great intellectual fellowship of all time; and if he will but open his mind to the genius and spirit of his calling, may feel himself inspired with the purest and noblest aims that have ever animated the spirit of humanity. Little indeed is it that we, even the most richly dowered with the gifts of intellect, can

do to advance the cause of truth. Slender at the best is the contribution we can make to the intellectual wealth of the world. But, slight though it be, it is surely something to think that it is taken up into and becomes an integral part of a life which neither space nor time can measure. Far above the agitation and strife of man's petty passions, far above the individual cares and interests that seem for the moment so important, never hasting, never resting, onward through the ages, the life of thought and knowledge advances to its goal. What its course has been in the past is only an augury of the yet more splendid future that awaits it. Science, advancing to richer discoveries, and a more comprehensive grasp of the order and system of nature; philosophy, shedding new and fuller light on the deeper problems of thought; art, enriching the world with new and fairer creations; and the many-sided intelligence of man, freed from the idols and prejudices that still encumber it, unfolding new capabilities of insight, and a new consciousness of power and freedom—if something like this is the intellectual destiny that lies before our race, is there not in the contemplation of it that which may inspire us with a high and ennobling sense of our work here, and of the ends to which such institutions as this are devoted? To work here in order to gain the knowledge that will qualify you to earn your bread is no dishonourable motive. To study

for honours, to be inspired by the love of fame and reputation, if it be the reputation of acquirements that are in themselves good and noble, is no unworthy aim. But there is an intellectual virtue that is higher and purer than these, without some touch of which you can be no true student. For, as the highest patriotism is that of the man who thinks not of honour or rewards, but so loves his country that he is content to be forgotten, to lose himself altogether in the larger, dearer life for which he lives; so he only rises to the true nobility of the student's calling who catches some sympathetic spark of that pure intellectual love, that love of knowledge for its own sake, which lifts him out of self into fellowship with those in all the ages whose life has been, and will be, the eternal life of thought.

ERASMUS.

November 17, 1877.

In the addresses which I have delivered at the opening of former sessions, I attempted, as some of you may remember, to bring before you some considerations of a general kind as to the studies with which a seat of learning is occupied—such, for example, as their unity and reciprocal influences, their progressiveness, and the conditions by which their porgress is determined. I am well aware, however, of the difficulty of treating such subjects so as not to tax your patience. The studies of this place are very varied, and in seeking points of view which are common to all of them, one is apt to lose in interest what is gained in breadth and comprehensiveness. It has occurred to me, however, that, turning aside from such general discussions as I have referred to, it might not be an altogether uninteresting and unprofitable employment of the few minutes during which I can claim your attention, if I should try to bring

before you some typical examples of those who have been your forerunners in the life of thought and study, and who have nobly achieved what it is your hope and aim, in some measure at least, to accomplish. On this, and, it may be, on some future occasions, I shall select some notable example of those who are universally recognized as masters in the various departments of human thought—in letters, in philosophy, in science, in art, etc.—tell you something of their outward career and of their mental history, and try to gather up some of the lessons with which their lives are fraught. To-day I shall ask you to contemplate with me the character and career of one who, though of many-sided nature, may in some respects be regarded as a characteristic specimen of the vocation of the scholar and the man of letters,—I mean ERASMUS.

Now there are, let me say in the first place, many reasons, some of them derived from the peculiar character of the times in which he lived, others from the special genius and history of the man himself, why the life of Erasmus should furnish a most suggestive subject of reflection for the modern student. It is well, for one thing, to go back from our easy intellectual position, with all our affluent aids to learning, in books, accomplished teachers, and methods of study perfected by long observation and experience, to contemplate the life of the scholar under different and immeasurably harder conditions, and to see how a

mind, not by any means of the very highest order, but of great activity and intellectual zeal and with inexhaustible powers of application, could conquer all difficulties and achieve a splendid success.

Moreover, the age in which Erasmus lived, divided from us though it be by a long interval of time, and by the wider gulf which the progress of science and culture and great and manifold social and political changes have created between the thought of the sixteenth and that of the nineteenth century, has in one respect such likeness to our own as to lend a peculiar interest to the great scholar's career. The time of Erasmus was a transition time, a period when, over all Europe, the spirit of the past was struggling with the spirit of the future, or rather, with the spirit of a remoter past which had awoke from the sleep of ages, to transfuse itself under new and richer forms into the life of the modern world. First in Italy, and then on this side the Alps, what we call "the revival of letters," the quickening of human intelligence by renewed acquaintance with the literature, the philosophy, the civilization of classical antiquity, had stirred up a new spirit of intellectual independence; and as everywhere this spirit grew and gathered strength, the natural result was a struggle with the long unmolested sway of tradition and authority. It was not merely that in the resuscitated treasures of ancient thought men found themselves

heirs to a long lost heritage, but that converse with the great writers of former times communicated a new self-confidence to human reason, awakened into new life the suppressed critical instincts, and made that attitude of docile ignorance or spurious intellectual activity which had hitherto prevailed, no longer possible. So long as in the great mass of men of all ranks and classes the life of intelligence was absolutely dormant, and for those who thought at all, the only outlet for intellectual activity was in proving and reproving the foregone conclusions embodied in the dogmas of the Church, the reign of ecclesiastical authority was absolute and universal. But as the educated mind became more and more familiar with the great things which the thought of former ages had achieved, a new sense of power, a new ideal of life, new criteria of truth, a craving for deeper intellectual satisfaction, began to discover themselves. The modern spirit was beginning to be conscious of its new-born powers, and even where it did not manifest itself in open revolt against established beliefs and institutions, it shook them to their very foundations. "Through all the palaces of ignorance," to use the words of the historian of literature, "went forth a cry of terror at the coming light." In all quarters—in the schools and universities, in the seats of ecclesiastical rule, in the great cities, in the sheltered seclusion of the cloister—as the new learning penetrated, the spirit of

free enquiry began to make itself felt, on the one hand, in a demand for changes and reforms, and, on the other, in the bitter, reactionary hostility of those whom interest, custom, or intellectual stagnation rendered its implacable foes.

Now, in all such transition periods there is one class of minds whose course of action is beset by special difficulties. How, amidst the ferment of a great social revolution, amidst the war of conflicting parties and interests, when old ideas and forms of belief are giving way, and ancient institutions are rudely assailed and obstinately defended, shall one whose tastes and vocation are simply those of the scholar and the man of letters, order his life? There are tendencies in the spirit of culture which would seem to draw the mind in opposite directions, and to render decisive action impossible. It is at once progressive and conservative; it has in it elements both of hardihood and timidity—a critical audacity which seems to rank its possessor on the side of revolution, and yet a fastidious moderation, a recoil from violence and vulgar iconoclastic zeal, which to a superficial observer gives him the air of the reactionary and the obstructive. A thinker, a man of ideas, imbued with the pure and ardent love of knowledge, and therefore hating obscurantism and all its brood of vices, intellectual and moral, he has yet no sympathy with the rôle of the vulgar partizan, and the coarse weapons of party war-

fare excite in him nothing but disgust. He cannot be false to his own growing convictions, or refuse to follow where the lights of science and speculation seem to lead him, even though it be to the uprooting of cherished associations and the subverting of venerable institutions; yet, on the other hand, there is a side of his nature to which the very antiquity of such institutions appeals, as something imposing and sacred; and where it is possible to breathe new life into the symbols and traditions of the past, he will have no hand in their destruction. The very keenness of his insight helps him to detect a soul of goodness in things evil, an element of truth beneath forms of exaggeration and error; and his acquaintance with the history of thought renders him tolerant of differences, friendly to comprehension, and averse to arrogant and indiscriminating censure of opinions.

Has our lot, too, fallen in an age of transition and conflict? Is the time we live in one in which the critical spirit has received, from the progress of scientific discovery and other causes, a fresh access of power, so that in Church and State, in all departments of human experience, there is no institution however ancient and established, no form of opinion, no symbol of faith, however sacred and venerable, which is not put on trial for its very life; and does it therefore become to us a question of deepest personal interest how, in such a time, a man

imbued with the true spirit of culture shall steer his course? Then I think that at least an important contribution to the answer to this question may be gathered from a study of the life of the great scholar of the Renaissance and the Reformation.

Of the outward life of Erasmus, the limits of this lecture do not admit of my giving even the most meagre outline. Those of you who care to know more about him I may refer, amongst other easily accessible books, to *The Life of Erasmus*, by Mr. R. B. Drummond, of Edinburgh, and to a more recent book on the same subject by a French author, M. Gaston Feugère. For my present purpose it will be enough that you bear in mind one or two facts in the life of Erasmus which I shall now very briefly narrate. Erasmus, or—to give his name with the Latin reduplication of the Greek form of it—Desiderius Erasmus, was born in the year 1467 at Rotterdam, where still one may see in the market place the quaint-looking statue which for more than two centuries has witnessed to the admiration of his fellow-citizens for their illustrious countryman. He began life under very unfavourable conditions, in straitened circumstances, and left by the death of his parents to the care of grasping and unkindly relatives. There is a tradition that he, who afterwards became the most famous scholar and man of letters of his day, was at school a bit of a dunce. The tradition rests on no satisfactory evidence, and is due, perhaps,

to the not uncommon tendency with reference to great men, to trace splendid results to unlikely beginnings. At any rate the fact, if it be a fact, is not one which affords any legitimate consolation to born dunces; and I need not suggest that it would be slightly illogical for any one to argue thus: "Erasmus was a dunce at school, therefore I, who am also a dunce at school, will be sure to become a second Erasmus."

His first start in life was a false one, and he ran a great risk of a misdirected career. What a man achieves in life, depends in no slight measure on the appropriateness of his calling to his natural gifts and tendencies. On the one hand, false ambition has not seldom overweighted slender abilities by the demands of a too exalted vocation, and an indifferent lawyer or doctor, or a poor and commonplace preacher, has been often the spoiling of a good ploughman or a successful shopkeeper. And on the other hand, great powers have been sometimes cramped or stifled by an uncongenial sphere of exertion. Erasmus, who had, as we shall see, nothing of the clerical nature in him, was in early life, against the strong bent of his genius, forced to enter the cloister, and afterwards into priest's orders. Fortunately, however, circumstances enabled him to effect his release from monastic vows, and opened up for him the way to that which was his true and proper career. He was enabled to gratify his great

ambition—that of studying at one of the famous Universities of Europe; and at the University of Paris, though struggling with almost incredible difficulties from poverty and weak health, he devoted himself with passionate enthusiasm to classical studies, and to that new learning which was now attracting the interest of all liberal minds. Here he soon began to attract the attention of men of letters, and by the productions of his pen to lay the foundations of that world-wide celebrity as a thinker and writer to which he gradually attained.

His various and voluminous writings I shall afterwards notice; and of the events of his outward life from this time forwards, my notice must be very brief. He frequently visited England, and spent at its Universities and amongst its men of letters many years of his life. From the very first he found much to gratify him in this country. Social distinction, universal deference, the friendship of such men as More and Colet and Grocyn, the attentions and favours of persons of rank—these and other attractions made England for him a second home. He finds something to praise even in its much defamed climate; its manners and customs pleased him, and in a letter to a friend he speaks with more gusto than we should expect in a sober ecclesiastic, of a certain osculatory usage, not confined to members of the same sex, which seems to have been prevalent in the English society of those days.

To Erasmus, as to Luther afterwards, a visit to Italy had been in his early youth an object of eager desire. To the latter that country was the ideal sanctuary of religion, to the former the home of poetry and art and letters. But though the disenchantment was not as great in the one case as in the other, though Erasmus was received with flattering attentions by patrons of letters and by the highest ecclesiastical dignitaries, he could not be tempted by brilliant offers of preferment to give up the freedom of the citizen of the republic of letters, and, by fixing his residence at Rome, tacitly to accept the rôle of a retained advocate and defender of the Church.

The later years of Erasmus's life were passed in what to him was the repulsive and ungenial atmosphere of ecclesiastical strife and revolution. "Up to the year 1520," says one of his biographers, "Erasmus stood before the world, acknowledged and honoured as not only the greatest scholar on this side of the Alps, but fairly competing with or surpassing the greatest in Italy. He was the object, no doubt, of much jealousy, much suspicion, but still more of fear. Through him Scholasticism was fast waning, and giving place to the Humanities, as they were called. The cloisters and more orthodox University might seem almost paralyzed. It might appear as if the world—certainly we might say it of England—was become Erasmian."

But now the time had come when the "long

smouldering" flame of religious revolution was about to break out, when between the Church and the Reformers, the defenders and the opponents of the established order of things, all hope of compromise seemed to be at an end, and when, in the fierce stirring of the passions of men on religious questions, it was almost impossible for even the most quiescent natures to remain aloof from the conflict, and the demand was made on every one to take a side. Erasmus was too important a personage not to have the call to declare himself pressed on him with special urgency. And, at first sight, it seemed impossible to doubt on which side he should take his stand. Not only by his graver critical works, his edition of the New Testament, his commentaries, his theological treatises, had he done much to shake the reign of authority and infallibility, and to introduce a spirit of free and rational criticism into the study of the long sacred questions of dogma and discipline, but in his lighter effusions he had employed all the resources of wit, of irony, of satirical description, of pungent raillery, to rend the robe of decent formality with which ecclesiastical institutions had covered their decay and rottenness; and he had roused all over Europe the ire of monks and divines by what is harder to bear than formal denunciation—setting all the world a-laughing at them. Surely he, the sworn foe of dogmatism and superstition and prescription, the eager

advocate of free thought and the rights of the human conscience, must now cast in his lot openly with the friends of reform.

But that course, though he never lacked the courage of his opinions, was impossible for Erasmus. He could put aside with disdain the bribe of place and preferment by which those who knew not the true nature of the man sought to enlist his services on the side of reaction. What of real or lasting dignity could title and office, the name of bishop or cardinal, have added to him, who was already the acknowledged king of the world of letters, and the bearer of a name which would be remembered and revered when a thousand conventional potentates and dignitaries should be forgotten. There may have been something in the fact that he was now, as has been urged, at a period of life when the most active mind yearns for repose, when the turmoil of controversy becomes repulsive, and the quiet student would fain devote the evening of life to retirement and meditation. But the motive of Erasmus's conduct lies deeper than the old man's natural indisposition to action and strife.

What that motive was will appear more closely in the sequel; but meantime I have only to relate the fact that he found it impossible to identify himself either with the party of revolution or with the party of reaction. He would not join those who were in open revolt from the Church and aimed at

nothing less than her overthrow; nor would he, on the other hand, consent to be silent as to the corruptions and abuses that so grievously deformed her institutions. And he had to pay the usual penalty which in a time of fierce conflict awaits the man of comprehension and compromise—the suspicion and hatred of the thorough-going partizans on both sides. By the one he was branded as a recreant and a traitor to his convictions; by the other, as a latitudinarian, a rationalist, a betrayer of the creed he professed and the Church whose minister he was. It is something to know that the recriminations of both sides, though they might harass and distress him, could not shake the confidence or embitter the sweet and genial nature of the man they assailed. And now, when the controversies of his day are things of the past, in the clearer light of history, not a few amongst us are beginning to see that, beyond the things which Erasmus valued as of the essence of religion, there is little for which a wise and good man would care to contend; and whether we approve or condemn his course of action, all of us alike can now do justice not only to the greatness of his mind and the splendour of his acquirements, but also to the purity of his motives and the truthfulness and independence of his character.

I cannot of course pretend, in the brief space at my command, to write an essay on the life and labours of Erasmus. All I can attempt is to suggest to you

in a very cursory manner one or two points in which his career seems to have a special bearing on our modern avocations and duties.

From this point of view let me call your attention, in the first place, to *his marvellous intellectual activity.* Perhaps the first impression left on the mind by the life of Erasmus is that of amazement at his extraordinary literary productiveness. Never, it would seem, was there so fertile a mind, never so busy a pen. Never even under the most favourable circumstances, and with the amplest resources at his command, has the most laborious man of letters, spending his whole time in the undisturbed seclusion of the study, left, as the monument of his intellectual activity, works so numerous, so elaborate, and on such a range of subjects, as this man of feeble health and manifold external distractions.

No doubt, indeed, he had some advantages which all students and scholars do not possess. He was, for one thing, free from domestic ties. Though he succeeded in shaking off many of the obligations of the monastic life, and retained in his intercourse with the world, and in his ways of thinking and acting, not a trace of professional narrowness, yet, perhaps from inclination as much as necessity, he continued all through life exempt from family cares. Now, though no doubt domestic life has its advantages—far be it from me to question it—yet perhaps it may be

conceded that celibacy has for a literary man this recommendation, that it leaves the energy of his nature, instead of being drained off by competing domestic and social claims, wholly free for intellectual work. From first to last, Erasmus was master of his whole thought and time. He could do what he liked and go where he would, as the exigencies of the scholar's vocation required, no man and—what perhaps is of more consequence—no woman forbidding him.

Also, there is something in the fact that, in his day, the whole field of thought was comparatively fresh and new. He was not, like a modern man of letters, forestalled in all directions by the labours of innumerable predecessors. People in our day still persist in writing books, but, in many departments at least, it is very difficult to get anything new to say, anything that some one of the great writers of the last two or three centuries has not said as well or better already. To a great extent we enter on a field where the harvest has been already reaped, and only the gleaner's scanty work remains to be done. Even an original thinker may often be chagrined to find that, in the ideas on which he most prides himself, he has only been rediscovering old truths, and that his happiest thoughts are but unconscious plagiarisms. And as for minds not of the highest order, they must content themselves either with the unambitious office of the interpreter of master minds to popular intelligence, or

at best with bringing with immense labour a very few grains as their small contribution to the already accumulated stores of human thought.

But, when Erasmus wrote, almost every department of thought was a fresh preserve. Greek and Roman literature, indeed, existed, and had disclosed to the educated mind a whole world of intellectual achievement of which, in form at least, the writers of the Renaissance felt themselves reduced to the position of half-despairing imitators. And not only was the very work of reproducing this literature, the function of the editor, the interpreter, the redactor, etc., one which in those days created an entirely new occupation, calling forth the rarest faculties of the scholarly and cultured intelligence, and stimulating its labours by the delight of ever new discoveries in a hitherto untrodden field; but the very fact that the classic literature was then a new literature gave the writers of those days an immense advantage over those of later times. Ideas that are now common-places, quotations and allusions that in a modern book would seem pedantic and stale, classical figures, metaphors, mythological images and invocations which are in our day too hackneyed for anything but schoolboy exercises—all these furnished in those days a wholly virgin material for authors, and possessed to the yet unsophisticated taste of readers all the charm of novelty. A writer, therefore, of fair erudition and ordinary diligence, could without diffi-

culty produce much readable matter, swell the bulk of his pages at a very small cost of thought, and gain the reputation of voluminous authorship at a much cheaper rate than is possible in our more fastidious times.

Nevertheless, making allowance for all these advantages, the fertility of Erasmus remains something almost unparalleled. He was all his days a man of feeble health, and for many of his later years he laboured under an organic malady which made exertion torture, so that he could write only in the intervals between ever-recurring accesses of acute physical pain. He was, moreover, a great traveller. His restless, sanguine, inquisitive temperament, as well as the scattered state of manuscripts and other literary material at that time, made long residence in one place impossible for him; and a great part of his time was, therefore, consumed in flitting about from place to place. Yet with all this, healthy or ill at ease, stationary or on the move, his eager brain kept ever active and his pen never rested. Scarcely a year of his mature life passed without the issue of some elaborate treatise, and in the intervals of his severer labours he flung out as a kind of parergon or intellectual diversion, satirical pamphlets, squibs, copies of verses, school books, manuals of good advice for young men and women—literary brochures of all sorts and on all manner of subjects. Much, indeed, of his writing

which comes under the latter classification does not imply great labour or research, or anything more than a full and fertile mind; and, in point of fact, some of his best and most popular productions were struck out almost at a heat. His *Encomium Moriæ*, for instance, a satirical fable, in which, in a tone of light, half-veiled, malicious mockery, he attacks the vices of the age and especially those of his two sworn classes of foes, the monks and the scholastics, seems to have been thrown off in a single fortnight when on a visit to a friend.

But these lighter effusions form only a small part of his works. The books on which his fame as a scholar, a critic, a theologian, mainly rest, are, all of them, works which could not have been produced without sustained thought and much labour and research. He is among the foremost of those to whom the world is indebted for the revival of classical learning. He published editions of the works of Aristotle and Demosthenes, translations of several of the plays of Euripides, of the greater part of Lucian, and of the moral works of Plutarch. He edited either in whole or in part, among other Latin authors, Livy, Cicero, and Terence. Moreover, in his well-known *Colloquies*, and especially in his *Adagia*, a vast collection of proverbs or pointed sayings gathered from the whole range of classical literature, he displays an amount of reading, a familiarity not only with the

great authors of every age, but even with obscure writers, which, it has been well said, "even in the present day, with all our subsidiary aids to learning, moves our astonishment."

Again, he has been called "the parent of Biblical Criticism." The edition of the Greek New Testament commonly called the Complutensian, though in preparation, had not yet appeared when Erasmus published his edition, with elaborate annotations and a continuous paraphrase; and the merit of this work, great as it is, is much enhanced in our eyes when we consider the enormous labour implied in the examination and deciphering of scattered and hitherto unedited manuscripts, and remember that in this, as in his other critical labours, he was without the help of previous labourers in the same field, and that for him the modern apparatus of lexicons, grammars, annotations, commentaries, etc., did not exist. It is true that, as might be expected, much of Erasmus's work as the restorer of classical and Biblical literature has been superseded, and that his editions have given place to the more accurate results of modern scholarship; but if we consider his work, not only in regard to the spirit that prompted and sustained it, the dogged and incessant opposition it had to encounter, and the manifold invaluable results with which it was fraught, but especially with regard to the conditions under which it was performed, we cannot wonder that the

best modern scholars should be ready to acknowledge the incomparable merit of the man who cleared the way for them and made their labours easy. Here, as in other departments of knowledge, the greatest honour is often due, not to those who have advanced the farthest, but to those who first broke ground; and to underrate their merits in comparison with later writers, because much of their work has been antiquated, would be like the mistake of the foolish child elevated on the parental shoulders, who should think himself a much taller person than his father.

Lastly, to omit all detailed mention of Erasmus's editions of many of the Greek and Latin fathers, and his numerous theological and controversial works, I must call your attention to what constituted no unimportant addition to his other labours, viz., his private correspondence. Now-a-days very few people, and least of all those whose brains are toiled by systematic literary work, bestow any pains on the business of letter-writing, or regard it in any other light than as a bore, to be got rid of as summarily as possible. But in the time of Erasmus this business could not be treated so unceremoniously. In those days there were no newspapers, journals, pamphlets, transactions of learned societies, and letter-writing came very much in the place of these. In our time many people who want their opinions made up for them on all sorts of questions get it done without

troubling their friends, in the daily and weekly papers, and in magazine and review articles. We do not need in our theological or political difficulties to have recourse to private consultation of competent advisers, or even to wait till somebody has written a book on the subject. The best thing that clever men can say on burning questions is always to be had in some smart or brilliant paper in next month's magazine, or the next issue of the Quarterly Reviews. But, in those days, men like Erasmus were the common prey of all sorts of people in quest of intellectual guidance. Not only friends and private acquaintances, but strangers of all ranks and classes in Church and State —bishops, cardinals, courtiers, ladies of quality, even princes and kings—were continually writing to him for counsel: and even if common courtesy had permitted, the sex or rank of the writers hindered him from treating them curtly.

Moreover, letter-writing had to be done under the consciousness of a very exacting standard, for every man of reputation knew that his letters would be handed about and treated as common property. Inaccuracy, levity, paradox, flippancy, the venial sins of a rapid and careless pen, must needs be guarded against, when everything a man wrote was sure to become currently known and quoted under the sanction of his name. In addition to this, a letter-writer had then to be careful of the form as well as

the substance of his letters, for they were written in Latin, at that time the medium of communication in educated society; and they had to be written in *good* Latin; for not only had the classical revival created a sort of new-fangled rage for purity of style, but Erasmus had many enemies, and among the bitterest of them, the pedants and grammarians whom his merciless quizzing had keenly incensed, and who were eagerly waiting for his halting. He wrote, therefore, knowing that for the slightest solecism, for any phrase wanting in elegance, nay, for any case or tense not sanctioned by Cicero or the authority of the writers of the so-called Augustan age, he would have to answer. Yet, all these conditions notwithstanding, he was so voluminous a letter-writer that his correspondence fills two folio volumes.

On the whole I have said enough, I think, to show, that the great literary reputation of Erasmus was not lightly won. It has become a sort of common-place in books of good advice to young men, that not genius but industry and application are the great means of success. This maxim is only partially true, and is certainly not to be appropriated as the consolation of dulness and stupidity. Nevertheless the life and labours of Erasmus are to a certain extent a proof of what intellectual industry and hard unflinching labour can accomplish. For his was by no means a mind of the very highest order. He was

clever and keen-witted, he had great quickness of apprehension, great sagacity and shrewdness, a correct taste, a nimble fancy, and a fund of genuine, inexhaustible humour, with a solid substratum of judgment and good sense to sustain all his other qualities; but he was neither a man of genius nor a profound thinker, he had nothing of the intuitive insight that saves a world of labour, or the instinctive grasp which seizes the essence of a subject while other minds are toiling by slow processes of enquiry and reasoning to reach it. What he achieved is for all students and scholars an example of what can be done by cultivating to the utmost the talent we possess, by unflinching diligence and steady toil, seconding a fair measure of intellectual power—in one word, of the great things that may in the field of letters be accomplished by good parts and hard work.

I can add only a few sentences on one other of those aspects of the life of Erasmus in which it is of special interest for us; and that is *his devotion to the cause of letters and liberal thought in an age of religious conflict.* Had Erasmus been merely an eminent ecclesiastic, a man whose reputation rested on his theological or polemical achievements, in this place we should have no special call to treat of him. But though he made many contributions to theological literature, Erasmus was not distinctively a theologian or a divine. The secret of his life, that which explains

and gives unity to much in it that, from another point of view, might seem doubtful or discordant, is this, that he was a man of letters who found himself by accident in the guise of a priest, and that he typifies for us, not simply the relation of culture to religion, or the relation of the modern to the ecclesiastical spirit, but that relation as it manifests itself in one who, being really akin to the former, is externally, and by force of circumstances, ranked among the professional representatives of the latter. The great interest of his career and of the virtues and defects, the excellencies and shortcomings which characterized it, lies in this, that he was a liberal thinker in the guise of a churchman, and that in an age of intense religious and ecclesiastical excitement.

Erasmus had none of the special tendencies, higher or lower, which fit a man for the calling of the ecclesiastic, especially in revolutionary and troublous times. Though of blameless life, and though there is no reason to question the sincerity of his religious belief, his piety was certainly of the rational rather than the emotional order, devoid of anything approaching to enthusiastic feeling, and in his theology the dogmatic element was ever subordinated to the moral and practical. Though constrained in early life to submit to monastic vows, you have only to look at the quiet, sagacious face that lives for us in Holbein's or Dürer's portrait, full of worldly shrewdness, sobriety,

and self-command, and without a trace of fervour or enthusiasm, to see that he who thus looked had no vocation for the life of the cloister. No raptures of mystic piety, no tendernesses of devout communion, could ever have kindled or softened those cool, critical eyes; no spiritual struggle and inward conflict, no ascetic abnegation and macerations of the flesh, could ever have disturbed the composure that sits on that calm, self reliant countenance. Insight, intellectual refinement, keen-witted sagacity, a humour half playful, half sarcastic—of such qualities you have unmistakable expression; but you could never conceive the owner of that face as the leader of an ecclesiastical revolution or a martyr for religious convictions.

And the story of his life, when we read it, in no respect belies the anticipations which the look of the man would lead us to form. The monk in him was not skin-deep. The priest's habit sat uneasily upon him. The sphere of literature and art was that in which the true element of his genius lay. His real church was the republic of letters, the dignitaries he most honoured were not popes and cardinals, but philosophers, poets, historians. His calendar of saints and martyrs embraced many who were strangers to papal canonization: and we do not wonder to hear him say that, after reading the *Phaedo*, he was tempted to exclaim, "Sancte Socrates, ora pro nobis!"

and to find him, like Dante, disposed to accord to Virgil a place, if not in the highest realm of the blessed, yet above that to which he had no scruple to consign immoral and flagitious ecclesiastics of the highest rank. The sole passion of his life, if we can use such a word of a nature so uniformly moderate and unemotional, was the love of letters and liberal thought, and his sole desire and aim as a churchman was to let the purifying breath of knowledge and cultured intelligence exert its wholesome influence on ecclesiastical ideas and institutions. It was vain to think to bind such a nature in ecclesiastical trammels, or to forbid it to find scope for its wider tendencies beyond the domain of arid scholastic dogmas or technical church routine. Already, in the years of his early cloister education, when caught indulging in prohibited classical studies, and compelled to turn from Cicero and Virgil to school divinity and church drill, he compares himself to Eurydice, catching a glimpse of the sweet light of day only to be plunged again in the darkness of the nether world. And his whole subsequent career is in keeping with this beginning.

Now the chief value and use of such natures as that of Erasmus, when brought like him into close relations with church affairs and ecclesiastical traditions and institutions, seem to be this, that they constitute a sort of living test of the measure in which

the Church and its traditions and institutions are in harmony with the spirit of culture. That spirit, however you regard it, is obviously a most potent force in the world's history, and especially in the formation and development of our modern life. That which we designate vaguely by such terms as 'culture,' 'civilization,' 'secular knowledge,' asserts itself as a power existing side by side with religion and the Church, yet acting in a great measure independently of them, filling a large, in many cases much the larger, space in educated men's lives, holding their thoughts, absorbing their energies, moulding their opinions, kindling their enthusiasm, shaping their character. Not religious teachers and writers only, but, with an even more obtrusive and persistent influence, men of letters, philosophers, historians, poets, scientific investigators, unfolding to us the treasures of nature and art, giving form to the creative conceptions of genius, transfusing into our minds and hearts the thoughts that live for ever in the literature of the past—these are they who are and must be, to a great extent, the masters of our minds, and whose far-reaching influence in every sphere of human activity it is almost impossible to over-rate.

Here then, side by side with the specially religious organizations, working in the same world and on the same spiritual natures, is an agency of incalculable power; and it becomes a question of

the highest importance how far this collateral force or factor in man's life is to be in harmony or hostility with the other. If, especially at a time when the world is deeply stirred by religious or ecclesiastical movements, we would learn how far science, letters, cultured thought, that kind of knowledge which helps a man to a deeper understanding of himself and the order of the world and the conditions of his life in it, can co-operate with existing religious ideas and organizations, or with any one or other of the religious tendencies that are struggling for the mastery—this is a question which receives its practical solution in, and lends a singular interest to, the lives of such men as Erasmus.

And what in his case was the solution? Erasmus has been called a precursor of the Reformation; and so, no doubt, he was. But it was only in the sense in which all light, all intelligence, all contact with ideas and converse with the great thinkers of the past, is against religious corruption and on the side of religious truth and purity and freedom. Up to a certain point culture and religion have common foes to fight, and are banded in a common enterprise. They were in Erasmus's day, and they are now, the sworn enemies of ignorance, of spiritual despotism, of dogmatism, of intolerance, of irrational superstition. If in the sphere of religion there has arisen anything which threatens or checks the free play of intelligence, any pretended

authority or mediation by which the spirit of man is forbid free and immediate communion with the God of truth; if for any reason religion is made to assume a jealous attitude towards erudition, is falsely alarmed at the results of historical and critical investigation, or shrinks from the free examination of the origin and formation of sacred documents; or if, when thoughtful learning and genius are seeking in a reverential and earnest spirit to clear received opinions of error and confusion, the attempt is made to silence them by clamour or by the terror of ecclesiastical penalties, then there can be no doubt on which side the voice of culture and liberal intelligence will be heard. So long as the conflict is with such foes, so long as the religious reformer is endeavouring to free himself and others from intellectual slavery and asserting the rights of conscience against sacerdotalism and spurious authority, then, from the ranks of lettered and scientific thought, a thousand voices will be ready to bid him God speed; then men like Erasmus, whose genius and vocation are those of the scholar rather than the theologian, are ready to co-operate with him hand and heart.

But there may and often does come a time in ecclesiastical conflicts when there is no longer any place or function for such men as Erasmus. Even when, as in the great religious movement of the sixteenth century, the conflict is one in which interests of real

and grave importance are at stake, but much more, when, as has too often been the case in ecclesiastical controversies, the zeal of the combatants is in inverse ratio to the importance of the matter in dispute, often the only attitude possible for such men is that of silence and reserve. If the questions at issue are those on which reason cannot be the umpire—things of words and names, oppositions of one unintelligible dogma to another equally unintelligible, determinations as to postures, dresses, arbitrary forms and observances —matters which have no rational significance and no bearing on life and duty—of all such discussions the scholar and thinker will wash his hands clear. He will refuse to let his mental tranquillity be disturbed by them. Unable to persuade the combatants of the futility of that which they are fighting about, there is nothing for him but to stand by in amused pity till the din be done. Or if the controversy be one in which intelligible issues are involved, here again such a man will refuse to go one step beyond the point where reason's voice can be heard, and men will consent to listen to it. He will never join in the appeal to the uninstructed multitude on questions on which only the trained intellect of the scholar and critic is entitled to pronounce an opinion. He will never countenance the substitution of recrimination for argument, of personal denunciation of the doubter for painstaking examination and refutation of his errors.

He will not be betrayed into indiscriminating censure even of opinions that have become tainted with error, and to the last he will strive to discern the soul of goodness and truth that is often hid under a currupt form, and to find in that deeper truth a fulcrum for the refutation of the heretic's own errors and mistakes. Finally, in judging of men and opinions and institutions, even of those with which he has least sympathy, he will try to see only with reason's eyes and hear only with reason's ears, to disabuse himself of individual and personal bias, to throw himself into other people's point of view, and to preserve in his estimate of them the calmness, the impartiality, the unimpassioned serenity and sweetness of reason itself.

Something like this was the spirit and temper of the great scholar whose career we have been contemplating. It may be that we, looking back with the clearer light which time and the progress of thought have thrown on the characters and events of his day, can now see that he carried too far the tolerant and forbearing spirit so congenial to his nature and his pursuits, that his hatred of strife and violence sometimes degenerated into timidity, and that the conservative instincts of the scholar led him to cling to institutions which had grown too corrupt for preservation. But at least this we can venture to pronounce, that the principles which guided him were those which all true culture tends to foster, and that even his errors leant to virtue's

side. For, in conclusion, let me repeat, the spirit and temper of the scholar, the spirit which comes of studious investigation and converse with the thoughts of the wise and good of ancient and modern times, is a spirit at once liberal and restrained, critical and tolerant, full of hopefulness, yet full of reverence, eager for advancement, yet careful to seek it in the lines which history and the intellectual and spiritual life of the past have consecrated. He is one who believes that all human institutions, secular and sacred, are of necessity changeful, because the life of thought on which they rest, unless when it sinks into torpor or is paralyzed by disease, is never stationary, never stereotyped in one rigid state, but is ever evolving its inexhaustible vitality in new and original products, ever seeking to clothe itself in fairer and fresher forms. But he is one also who recognizes the continuity of man's spiritual life, who knows that it is neither desirable nor possible to cut ourselves off from the life of the past, to shake off the influence of its traditions or deprive ourselves of the inspiration of its great and noble lives. He will never, for the doubtful advantage of spick and span new symbols and organizations, throw away the influence over men's minds of those which have stood the test of time and into which new life can be breathed. If it is possible to purify the temple's courts from within, he will not forsake or share in the destruction of the fane which the faith of

a hundred generations has hallowed. If it is not perverted into the means of intellectual and spiritual bondage, he will not destroy one link of the golden chain that binds the thought and life of the present to the thought and life of the ages that are gone.

GALILEO.

November 8, 1879.

In some of the addresses which I have delivered at the opening of former Sessions, I have endeavoured to give an account of the life and work of some of those illustrious men to whom we owe our intellectual inheritance, and who have nobly achieved what it is our hope and aim in some measure at least to accomplish. I have directed your attention successively to conspicuous examples of men eminent in scholarship, in letters, and in philosophy,—to-day I shall ask you to contemplate with me the life, the character and achievements of a great man of science. The task would be a bold one, for me, indeed, an impossible one, if the appreciation of a great name in the history of science were the exclusive function of those who have themselves made science the work of their lives, or who are experts in the particular department to which that great name belongs. But though it is true that special knowledge and affinity of tastes and pursuits are invaluable

qualities in a biographer, and indispensable for a technical estimate of a great man's contributions to his special department of knowledge, yet there is an obvious distinction between a scientific biography and the biography of a scientific man; and the latter and less ambitious task may be in some measure overtaken even by one who is altogether incompetent for the former. Not only is it true that the greatest men are ever those who are something more than specialists, and that their career furnishes materials for a moral and psychological study outside of the particular field in which their fame was won, but in the department of science it is possible to recognize the value of results without that professional knowledge which would enable us to criticise the process by which they have been reached, and those who stand only in the outer court of the temple may be able, with a not altogether blind admiration, to reverence those high priests of science whom they cannot follow within the veil.

It is unfortunate for me, that by a somewhat singular coincidence the name which, led by the foregoing considerations, I had selected as the text for a few reflections on the character and career of the man of science, is that which has been taken as the subject of an introductory lecture to which many of us listened with delight on Wednesday last.[1] I can only console myself by reflecting that though by this

[1] The introductory lecture of Professor Jack.

accident any little interest my words might possess has been discounted, yet my new colleague's masterly treatment of the subject in its properly scientific aspect absolves me from even the poor attempt I might make in that direction, and that I am enabled, by simply referring to what he said, and greatly to your advantage, to skip all reference to scientific questions and to confine myself to the treatment of the subject in its more general aspects.

Recent historical investigations have somewhat lessened the splendour, not indeed of Galileo's contributions to science, but of the personal greatness of the man. Nevertheless it is still true that amongst the pioneers of modern scientific research there are few or none who have enriched science by results so important, or whose personal history is of so much pathetic interest and so full of instruction for those who can read its lessons. I shall briefly recount the leading incidents of Galileo's life, and then, so far as time permits, try to gather up some of the lessons for the modern student with which it is fraught.

The same day, the 18th of February, 1564, which deprived Florence of its greatest artist, Michael Angelo, was that on which one who was destined to win for himself by his genius and his works a not less illustrious name, saw the light. It was not indeed by carrying on the succession of great names in poetry and art, which had begun with Dante, that Galileo was

to shed new lustre on the country of his birth. But in another sense there was no breach of continuity, for the genius of a great discoverer in the realms of science, though he is called to deal with sober facts under rigorous conditions of observation and experiment, is yet one which calls into play some of the highest exercises of the creative imagination; and though it was not the vocation of Galileo to bear us upward on the wings of poetic intuition into communion with the invisible and ideal, it was the not less elevating result of his labours to lift the veil from the real world and to show it to mankind vivified by the light of thought and glorified by the presence of unchangeable order and eternal laws. The earlier portion of Galileo's life owes its chief interest to the struggle of a mind of strongly marked aptitudes to reach its proper vocation. He was of what is called good family, but straitened circumstances compelled his father to sacrifice aristocratic scruples and to select for his son, notwithstanding early indications of talents that fitted him for a higher career, the unambitious but lucrative employment of a seller of cloth. Youthful aspirations are not always infallible indications of an exalted destiny. The promptings of personal or parental ambition have sometimes diverted a substantial contribution from an honest handicraft only to secure a worthless offering to literature or professional life. An indifferent artist has not seldom been the spoiling of a good artizan, and the world has

been poorly compensated for the loss of many excellent coats and shoes by the bestowment on it of bad poems and dull sermons.

In the case of Galileo, however, the signs of incipient genius were really prophetic of a great future; and so, by a compromise between interest and ambition, his father resolved that he should abandon the calling of a distributor of wool to prepare by a University education for a profession which is sometimes a lucrative, sometimes an intellectual one, and sometimes both—that of a physician. But at the University of Pisa, Galileo's bent towards purely scientific pursuits became too pronounced for further resistance. He spent much of his time in constructing ingenious pieces of mechanism, in his solitude he studied Euclid when he should have been occupied with Galen and Hippocrates; and amongst other incidents indicative of strong natural bias, it is told of him that whilst attending divine service in the Cathedral at Pisa, his thoughts very improperly wandered from the sermon to watch dreamily the swinging of a beautiful lamp, the work of a great Italian artist, which, suspended from the chancel arch, had been accidentally moved from its vertical position. It was not, however, the beauty of the lamp which attracted his attention; for, though by no means destitute of artistic taste, the scientific instinct, which was in him ever the strongest, led him to notice that the oscilla-

tions seemed to be performed in exactly equal times, and this, by comparing them with the beatings of his pulse, he ascertained to be actually the case. This discovery of the isochronism of the vibrations of the pendulum, and its important applications, was afterwards to engage much of his attention.

Having at length secured his father's consent to devote himself entirely to mathematics and physics, he almost immediately attracted the attention of Italian mathematicians by composing an essay on the hydrostatical balance, suggested by the writings of Archimedes, and by the patronage of Ferdinand de Medici he was at the early age of 25 appointed Lecturer on Mathematics at the University of Pisa. Professors of Mathematics were not in those days so adequately remunerated as in more recent times, for the salary of his office, we are told, was only 60 crowns, or about £13 of our money. He was appointed only for a limited term of years, but his tenure of office was destined to be still more brief. The Aristotelian physics had long been regarded as an infallible authority in the schools of learning, and no Confession of Faith was ever deemed more sacred from criticism than for ages had been regarded the physical dogmas of the master. It is true that some whispers of dissent had been tolerated in the case of that universal genius, Leonardo da Vinci, and others. But

> "That in the captain's but a choleric word
> Which in the soldier is flat blasphemy";

and it was with mingled amazement and indignation that the University authorities at Pisa found that the youthful professor was instilling into the minds of the students, whose admiration he had won by the originality and brilliancy of his teaching, scientific heresies of the most dangerous character. He presumed not only to question the traditional doctrines in physics, but to denounce the Aristotelian method, and to appeal from loosely-grounded presuppositions or *à priori* axioms and syllogistic deductions to the rigorous investigation of facts and phenomena as the sole criterion of truth in science.

One tenet, for instance, of the Aristotelian mechanics was that heavy bodies fall to the earth more rapidly than lighter bodies, and that their velocities are in proportion to their weight. Galileo attacked this doctrine, refuted the traditional arguments on which it was based, and maintained that, with allowance for the unequal resistance of the air in different cases, all bodies would fall from the same height in the same time. The learned appealed to Aristotle and to the obvious and self-evident truth, as they held it, that a mass weighing ten pounds must needs fall to the ground in one tenth of the time which it takes a mass of one pound to fall from the same height. Galileo appealed to the infallible test of experience. In the presence of his gainsayers he ascended the Leaning Tower of Pisa and dropped from

its summit bodies of unequal weight, which struck the ground at the same instant. Not even then, however, would his censors, though silenced, confess themselves defeated. In many minds refutation, so far from subverting, rather serves to strengthen the hold of inveterate beliefs. A disproved dogma, like a departed friend, becomes only the dearer, and he who speaks evil of either is regarded with the like detestation. It is not, therefore, to be wondered at that, notwithstanding the sympathy and admiration of his pupils and the success of his teaching, the audacious innovator soon found his place too hot to hold him. Happily for him, at this conjuncture, another position, that of Professor of Mathematics at Padua, which was in the gift of the Republic of Venice, where a freer and more progressive spirit prevailed, was very opportunely offered to him, and at once accepted.

Of his long and brilliant career in his new home, of his patient researches and the important discoveries in mathematics and physics and in the application of science to the mechanical arts, which crowned his labours, and of his growing fame as a teacher and investigator, I am, for the reason above indicated, happily relieved from the necessity of saying anything. I confine myself therefore to that part of his scientific life which, both in itself and in its bearing on his future career, was most significant, viz., his astronomical discoveries and their relation to

the Copernican system. He appears at first to have taught and defended in his lectures the all but universally accepted Ptolemaic system, and, whether from the cautious spirit of true science or from a less worthy motive, to have continued to teach it even when his own convictions had begun to lean in the direction of the new doctrine. But circumstances soon forced him to break through his self-imposed reserve. The first of these was the sudden appearance and as sudden vanishing of a new star in the constellation Serpentarius, in October, 1604. It was one of the hitherto undisputed and most sacred Aristotelian doctrines, to which the language of Scripture, according to the popular interpretation of it, lent its sanction, that the celestial spheres were perfect and unchangeable, and that all phenomena indicating change, such as comets and meteors, were only within the region of the earth's atmosphere. Galileo showed from the fact that the new star had no sensible parallax, that it must be situated far beyond the bounds of our system, and that the so-called inviolability of the vault of heaven was a mere popular illusion.

But all other discoveries were speedily thrown into the shade by the phenomena which a new instrument of observation was the means of disclosing. Acting on the hint supplied by the rumour of the invention of a Dutch optician, Lipperhey,

Galileo, from his own knowledge of the laws of reflexion and refraction, succeeded in constructing what we would now call a telescope, which showed distant objects magnified three times, then another with a magnifying power of eight, and finally a third with a power of more than 30 times. The telescopic appearance of the heavens has been long familiarly known to us, and "it is hardly possible for us to conceive," as has been said, "the intense interest with which the first glimpse of it must have been obtained. The multiplicity of the brilliant objects calling for examination, the undefined expectation of what might be revealed by the powers of an instrument yet untried, and the probability of numerous additions to the list of those bodies which had as yet come under the cognizance of man—these, and the host of kindred emotions, must have united to give an overwhelming interest to first results of the new process of observation."

Possessed then of an instrument available for astronomical purposes, Galileo directed it successively, and, as he himself says, with incredible delight, to the heavenly bodies, observing first the surface of the moon, and detecting in almost every part of the disc of what had hitherto been supposed to be a body perfectly spherical and smooth, what seemed to be ranges of mountains, deep hollows, and other inequalities—discoveries to which one who at a later

time, when the great astronomer was broken and crushed by the storms of adverse fate, visited and learned to know and love him, has thus referred in the *Paradise Lost:*

> . . . "the moon whose orb
> Through optic glass the Tuscan artist views
> At evening from the top of Fesolè,
> Or in Valdarno, to descry new lands,
> Rivers or mountains in her spotty globe."

Next, "directing his telescope to the Milky Way, he discovered there crowds of minute stars unrecognizable by the naked eye, and inferred that the whiteness of this part of the heavens was due to a multiplicity of still smaller stars which his telescope could not resolve." A still more important discovery succeeded, viz., that of Jupiter's satellites; then that of the spots on the sun's disc, from his observation of which he inferred the rotation of the sun on its axis; then certain phenomena which ultimately led to the discovery of the ring of Saturn, and,—to name no other, in the same year so rich in new results,—observing the planet Venus when not far removed from the sun he saw her "in the form of a crescent resembling exactly the moon at the same elongation," and by continued observations found that Venus exhibited phases which could only be due to her revolution round the sun. Similar, though less conspicuous, changes of phase he found to characterize the planet Mars.

Never in so short a space of time had the realm of human knowledge been enriched by discoveries so splendid and resting on a basis of evidence so clear and irrefragable. What reception might they be expected to meet but the eager interest and assent of all intelligent minds, and the admiration and reverence of mankind for the man who had, as if at one stroke, expanded and revolutionized the whole aspect of the physical universe, and opened up a future of inconceivable progress for subsequent observers. And yet, strange to say, it was just these inestimable contributions to man's knowledge of nature which changed the hitherto comparatively smooth and tranquil current of Galileo's life into one of stormy conflict and unrest, which roused against him a host of individual enemies, and, above all, which brought him within the toils of a spiritual despotism, then, as now, the instinctive foe of light and liberty, and then, as happily it is not now, too formidable to be despised.

To understand this, and to enable us to see the significance of the remaining period of Galileo's career, I must ask you to reflect for a moment on the relations in which discoveries such as his necessarily placed him, first, to the scientific authorities of his day; and, secondly, to that power which claimed for itself supreme authority both secular and spiritual. In the first place, the seats of learning were against him. It might indeed be expected that these homes

of science and intellectual culture should ever be the first to welcome fresh light. If there are any places on earth, we should suppose, where the advancement of knowledge would be the first and highest aim, where the value of new and better methods of investigation would be discerned long before the outside world had learned to appreciate them, where the dawning light of a great idea in philosophy, or a new discovery in science, or a fresh result of historical and critical investigation, would be seen and hailed as from a watch-tower long before the lower levels of intelligence had caught its gleams,—if there are any places in a civilized country where an original thinker would be sure to find an asylum from the prejudices of ignorance or the clamour of interested malice, surely, we should say, it must be the Universities and schools of learning. Whether it be so in our day or no, I will not venture to say, but, looking to the past, experience unfortunately often belies such an expectation. Too often it has been just in these places that the stolid inertia of custom has been slowest to overcome, too often it has been into these retreats that the light of new thought has taken longest to penetrate, and there that the pioneers of science and speculation have found the coldest welcome or have met with jealous suspicion or persistent neglect. To take a single remarkable instance from the history of science in our own

country, forty years after the publication of Newton's great work, the Cartesian system, it is said, was still taught as the only true one at the English Universities, and in his own University of Cambridge he did not live to see his doctrines introduced.

Such too, and in a still more aggravated form, was the experience of Galileo. The fame indeed of his great discoveries spread far and wide, and attracted crowds, amongst whom were numbered distinguished men from Germany, from France, from the Low Countries and elsewhere, to his lecture-room; and not a few men of science followed the example of Kepler who, with magnanimous superiority to all personal jealousy of a rival in his own special province, wrote with enthusiasm that Galileo had by his discoveries given evidence of the divinity of his genius, and reprinted the *Sidereus Nuncius* in which they were given to the world, with a preface in which he expressed his conviction of the truth and value of the new telescopic observations. But in his own country the professors of science in the Universities almost universally refused to recognize his discoveries, and not a few did their best to discredit them.

Nor is it difficult to understand the reason of their hostility. Vulgar jealousy of a brilliant rival might act on some minds, but the secret of the opposition was in most cases much deeper. Galileo was not simply the discoverer of a few new facts

and phenomena, which might be incorporated into their old system of teaching; at one stroke he destroyed their whole stock in trade, and forced them, should they accept his theories, to begin the world anew. The Aristotelian method and the Aristotelian physics, or rather, these interpreted and overlaid by the authoritative dogmatism of the scholastic doctors, had for long been in undisputed possession of the Universities. And that method was one which almost entirely exempted its adherents from the toilsome work of observation and the patient study of nature. Principles of sweeping generality were either assumed, or accepted on the evidence of a few imperfect and unsifted observations; and from these, as from mathematical definitions and axioms, the whole body of the accepted scientific conclusions were derived. The circle, *e.g.* it was laid down, is the most perfect figure, therefore the movements of the heavenly bodies must all be performed in exact circles and with uniform motion. If any observed facts seem to conflict with this dogma, they must not be allowed to suggest any doubt of the principle of circularity, but recourse must be had to intricate combinations of circular motion to preserve the alleged ideal perfection. Motions, again, it was said, are either natural or unnatural. The natural motion of fire and light bodies is upwards, of heavy bodies downwards, therefore the latter seek the earth.

The heavens, according to another dogma, are unchangeable; for change is either generation or corruption, which implies contrariety. But the celestial motions being circular admit of no contrariety, and are therefore incorruptible and unchangeable.

No wonder that to men habituated to this short and easy way of developing nature out of their internal consciousness, Galileo's discoveries should come with a shock of surprise and alarm. It was not in human nature to hear calmly the inflated system of sounding generalizations and dogmatic assertions with which their intellectual life was identified, treated as an illusion, to see it suddenly collapse before the incisive assaults of the teacher of the new learning, and to be told that they must renounce all this parade of fictitious knowledge, and seek to enter anew the kingdom of science, as little children.

But it was not merely the opposition of science, falsely so called, that Galileo had to encounter. The simple conflict of truth with error and baseless assumption could not have been long continued or of uncertain issue. But his discoveries brought him into collision with a more dangerous foe, and one with whom for him the struggle proved to be a very unequal one. All light is on the side of true religion, but history shows that all light is not on the side of the Church. In the case before us, the particular results of Galileo's investigations, and the spirit and tendency of the

method by which he prosecuted them, placed him in antagonism to the ecclesiastical authorities of his time. At first blush experimental science and theology would appear to belong to provinces so independent as to preclude all collision between them. Whether the earth goes round the sun or the sun round the earth, whether the orbits of the planets are circular or elliptic, whether Venus and Mars shine always full-orbed or exhibit phases like the moon, and the like questions; and, on the other hand, what is the true doctrine of the Trinity, whether justification is by faith or works, whether "grace" is pre-venient or co-operative, whether there are two sacraments or seven, whether the Pope is Peter's successor and the infallible head of the Church or Antichrist and the Man of Sin—these are classes of questions pertaining to things so incommensurate, so incapable of comparison or relation that, it would seem, any possible belief might be held in the one province without clashing with any opinion or belief in the other. Not only personal piety and morality, but thorough orthodoxy in one's ecclesiastical creed, would seem to be quite unaffected by ignorance or wrongheadedness in science; and, on the other hand, a heretic in theology might, for all that appears, be a man of accurate and comprehensive scientific conceptions. Galileo's telescopic discoveries were demonstratively confirmatory of the Copernican system

of the physical universe, and he himself knew them to be so; but why should he, a sincere Catholic though he was, have had any more difficulty in avowing his belief in the Copernican system than his belief in the rule of three?

The answer is, that though scientific errors and moral and religious aberrations do indeed belong to wholly different categories, though neither merit nor blame in the forum of conscience can attach to the conclusions to which a scientific investigator is led, yet in the case before us, as in many others in its history, the Church has gone out of its way to create artificial sins, and by attaching moral and spiritual responsibility to convictions with which the conscience has nothing to do, by dragging into the province of religion, principles and beliefs which have no relation to piety—opinions concerning physical facts, questions of chronology and historic criticism, of dates, names, matters of bibliographic curiosity—theological authorities in all ages have done what they could to confuse men's moral and religious perceptions and to lay snares for weak consciences. Astronomical conceptions have no connection with piety or morality, but the current interpretation of Scripture sanctioned by the authority of the Church was inconsistent with the Copernican system, and its adherents must be prosecuted as enemies of religion. All theologians, Catholic and Protestant, have long found it possible

to reject the doctrine that our earth is the immovable centre of the universe about which the other heavenly bodies revolve, and at the same time to believe in the divine inspiration of a book whose language, literally construed, sanctions that doctrine. They have long ceased to perceive any contradiction between a theological doctrine which makes man and his world of infinite worth in the sight of God, and an astronomical doctrine which dwarfs this earth to the position of a minor planet in the solar system, itself but an insignificant member of the system of worlds and stars and suns that people the immeasurable depths of space.

But in Galileo's time it was not so. How, it was thought, could man pretend to believe that the sun rises and sets, and returns to his place, like "a strong man rejoicing to run a race," as Holy Writ tells us, or to accept Joshua's miracle in which that orb is made to stand still, or Isaiah's in which he "returns ten degrees by which degrees he was gone down," when yet they aver their belief that the sun never moves at all? How could men continue believers in the cosmogony of Genesis, which, interpreted according to its plain meaning, makes this earth of ours the first work of creative power, and then rears over it the vault of heaven, with a sun and moon and stars whose only function is to give light to it; or again, in that great order of

redemption which ascribes infinite grandeur and importance to man and the scene of his existence, whilst yet they taught a blasphemous theory which makes the earth no more important than a single fluttering leaf in a boundless forest or a tiny drop in the immeasurable ocean? It is not difficult to understand that, before theologians had found a way of readjusting the relations of Scripture and science, such considerations as these should give rise to serious alarm in the minds of ecclesiastical persons; how that alarm should spread to what we would now call "the religious public"; how it should gradually gather head till it became a demand that the rash thinker should be dealt with by the Church Courts; and finally formulated itself in a charge of heresy and a demand for recantation under the threat of serious temporal penalties.

I cannot tax your patience by any detailed narrative of the remaining incidents of Galileo's life. They are for the most part simply a story of misspent energies, of great intellectual power diverted from its proper work, of a mind compelled to waste in fierce and futile strife with theological obscurantists the great powers whose natural vocation lay in the peaceful fields of science. In an evil hour for himself, tempted by the prospect of increased emolument and greater leisure for research, he exchanged his position under the protection of the Republic of Venice, and its atmosphere

of political independence and intellectual freedom, for a place at the Court of Tuscany, where ecclesiastical prejudices and influences gave its tone to the social atmosphere, and where he was comparatively defenceless against the machinations of the enemies of free enquiry and the ghostly terrors of the Inquisition. Galileo had no inclination for theological controversy. The results of research he was content to give to the world and let them stand for what they were worth, judged by a purely scientific standard. Whatever else was true, they were true, and it was the business of others to adjust them to their preconceived notions.

There have been, perhaps there still may be found in the scientific world, men of a different temperament—men who are never so happy as when they are setting theologians by the ears, whose delight it is to wound theological susceptibilities, to seize on some fact or theory that seems to conflict with traditional religious beliefs and to flaunt it in its most offensive aspect before the eyes of indignant ecclesiastics. To make sport for the profane and gain a cheap notoriety by such undignified tricks was altogether foreign to the calm, reverent, religious spirit of the great natural philosopher. But in his own despite he was dragged into the atmosphere of theological strife, and compelled to waste the rest of his life in vain attempts to reconcile the irreconcilable, to show the consistency of unquestionable scientific facts with impossible theological dogmas.

And here too, as in similar cases, it was not the wiser heads, but the camp-followers of the Church, that forced on the controversy. There were many cultured ecclesiastics, and amongst them the highest dignitaries of the Church, who had sufficient intelligence and sympathy with science to be by no means sure of their own traditional stand-point, if not to have the secret conviction that on the matter in hand the truth lay on the side of the man of science. These therefore would gladly have avoided a conflict whose dangerous character they more than half-divined. But, as often happens, ignorance and fanaticism forced the hands of wary and astute leaders, and the attack on scientific freedom was begun by the class of persons in which zeal is generally least tempered with discretion.

A Dominican monk, we are told, mounted the pulpit and preached a declamatory tirade against the new learning on a text in which prophetic inspiration had wonderfully anticipated the very name and pursuits of the impious astronomer, "Ye men of *Galilee*, why stand ye gazing up into heaven." By a conclave of people of this sort, the mind of a weak but jealous lady of high rank, the mother of the Grand Duke, was inflamed with prejudice against the anti-scriptural doctrine of the double motion of the earth; and at length the mind of the religious public became so charged with suspicion that Galileo was constrained to abandon his attitude of reserve, and to attempt in a published letter

to prove at once the scientific truth and the theological harmlessness of the Copernican system. In this letter he discusses the question of the relations of Scripture and science with great clearness and force, and he rests his case on arguments to which, whatever their cogency, modern controversy on this subject has added little. But Galileo might have spared his pains. No matter how solid the basis of fact on which his conclusions were founded, no matter how vigorous his deductions and irrefragable his logic, no matter how profound and sincere his deference for Scripture, and even his submission to the authority of the Church in its own province, the controversy was now removed to a region, as it was soon to be submitted to the decision of a tribunal, where fact and reason, clear demonstration and felicitous expression when opposed to foregone conclusions and the intolerance of ignorance, are of no more force than sharp arrows shot against a mud wall. I am compelled by the limits of this lecture to omit all intervening incidents, and to conclude by a brief reference to the well-known story of his final appearance before the great ecclesiastical tribunal of those days—the Holy Inquisition.

Recent historical investigation has done much to modify the long received story of Galileo's trial, and to strip away something of the glory which popular estimation for a time rendered to him as the most illustrious of the "martyrs of science." The long

current story represented the man of science, old and feeble in body, but dauntless and intrepid in spirit, thrown into the prisons of the Inquisition; then, when brought forth, with noble fortitude avowing and defending the impugned doctrine of the earth's motion before his judges, remaining steadfast even when his feeble frame was stretched on the rack, till at last, when flesh and blood could bear no more, he promises to recant; and even then, when, broken and crushed by physical torture, he has been compelled, kneeling before his persecutors, and clothed ignominiously in a penitential garb, to utter the form of recantation, he has scarce risen from his knees till the famous words, "But it still moves," break from his lips in mockery of the solemn farce that had just been enacted. Lastly, to fill up the horrors of the popular story, he is condemned to be deprived of sight, and thrown again to languish out life, blind and mangled, in the dungeons of the Inquisition.

Bad, however, as the true story is, the greater part of these material horrors are the mere accretions which the popular imagination has gathered round it. In the form to which criticism has reduced it, it tells worse for Galileo, and somewhat better for his persecutors. Whether from the interposition of powerful friends, or from the fact that his astute judges knew their man, and saw that in his case physical torture was superfluous, he was treated during the whole course of

the trial with marked external consideration. He was allowed to remain with his friends, save for a short interval when the rules of the Holy Office rendered his presence imperative, and even then, instead of a dungeon, he was lodged in a comfortable suite of apartments, attended by his own servant. Even after his condemnation, the sentence of imprisonment was very laxly interpreted, and it ultimately became nothing more serious than his being interned on parole within certain limits, and he passed the last years of his life in a villa of his own in the neighbourhood of Florence, and in the society of his friends and pupils.

But, stript though it be of the more repulsive adjuncts, the real degradation and pitifulness of the story remains in substance the same. On the one hand we have an odious spiritual despotism invading the sanctuary of thought, and exacting a verbal renunciation of convictions which it could never really overturn, and, by intimidation, forcing a man of great intellect but feeble resolution to stain his soul with falsehood. And, on the other hand, there is the sad spectacle of intellectual strength combined with moral weakness; of a mind of the highest order, rich in the results of a life of thought and research, stooping to let all go—truth, freedom, self-respect, his own honour and that of science implicated with it—to overshadow the lustre of a noble and blameless life for the sake

of personal safety, and at the bidding of a rancorous confraternity of priests. "I abjure, curse and detest the false opinion that the sun is the centre of the world and immovable, and that the earth is not the centre of the world and moves; and I swear that I will never assert verbally or in writing anything that might furnish a suspicion of return to the foresaid errors and heresies, so help me God and these Holy Gospels which I touch with my hands." Such were some of the words with which one whose name is among the greatest in the annals of science dimmed for ever the splendour of its fame.

It says something for the indomitable spirit of the man, as well as for the irrepressibleness of his scientific instinct, that, after this, he could still find consolation in his former pursuits. But the spring of his intellectual life was paralyzed. He dragged out his few remaining years in weariness of spirit, and amidst gradually increasing physical infirmities, yet not without the alleviation afforded by the reverence and kindly ministrations of friends and pupils, who clung to him to the last. His desire that his remains should rest in the burial-vault of his family in the Church of Santa Croce at Florence was for a time frustrated by the papal authorities, who warned the Grand Duke that his reputation for piety would suffer if he permitted the dying wish of a convicted heretic to be gratified. It was not till well-nigh a

century had elapsed, and the world had come to know how little Popes and Grand Dukes can arrest the progress of truth, or the honour due to its discoverers, that Galileo's remains were removed from an obscure resting-place to the spot where he wished to lie. There are few cities which possess so much historical interest, so many attractions for the lover of art, so much in its stately palaces, its venerable churches, its monuments dedicated to immortal names, to touch the springs of association that link the present to the past. But if we know how to forget the faults of human weakness in our admiration for genius and gratitude for invaluable contributions to human knowledge, there is no spot in the fair capital of Tuscany to which the visitor will feel his steps drawn by a purer and profounder intellectual interest than that over which an inscription tells him that he stands on Galileo's grave.

The benefit which the modern student of science derives from the labours of any of its great pioneers is, for the most part, an indirect one. It reaches him, not through the study of their works, but through the impulse which they gave to the new direction of human enquiry, the new method of investigation they struck out, and the spirit of patient and untiring devotion to the study of nature which the cultivators of science in all succeeding generations have inherited

from them. For physical science differs from some other departments of human attainment in this respect, that here the results of individual effort are rapidly superseded and rendered obsolete. A great work of art is never antiquated. The poetry, painting, sculpture of one generation is not superseded by that of the next, nor is there any such law of progressiveness in literature and art as makes it necessary that the achievements of a later should transcend in value those of an earlier time. The works of the poets and historians not only of the past literature of our own country, but of far distant periods of human civilization, are still in our hands, their names are daily on our lips, our most skilled critics spend their lives in eliciting their meaning, their works remain both in substance and form a permanent intellectual possession of the world.

It is different with the works of even the greatest contributors to science. Their books are not read. Sometimes their researches, in so far as they were really valuable, have been valuable chiefly as stepping-stones to greater discoveries; sometimes they have been proved by subsequent investigation to be only approximations to truth, provisional hypotheses which have been superseded by more accurate and comprehensive generalizations. Even in the case of those great discoveries which, like most of Galileo's, remain permanent contributions to our knowledge of nature,

the form in which they were first propounded has often been greatly improved on by the labours of later though perhaps inferior minds, to whose works alone the modern student owes his acquaintance with them. How many pages of the sixteen volumes of Galileo's works are read in a year by the whole scientific world of the present day? Who now reads Kepler's *Commentaries on Mars*? How many English mathematicians and physicists are acquainted with their great fellow-countryman's investigations in the form in which they were given to the world in the *Principia*? For all practical purposes the modern student gets what is of permanent value in the past literature of science in a simpler and clearer form, and with the modifications suggested by subsequent research, in the scientific manuals and text-books of our own day; and so whilst the latter are in everybody's hands, the dust gathers undisturbed on the works of the masters.

But though in this sense the work of the great pioneers of science has passed away, in another and higher sense it still lives and can never perish. It lives in our undying admiration and reverence for their genius. It lives in the ever-accumulating succession of discoveries in every department of scientific observation to which their lives and labours gave the first impulse. It lives in the intellectual discipline which in such places of education as this thousands are yearly gaining from the new instrument of human culture which they

created. Far more important even than their own discoveries is that awakening of the scientific spirit, that new direction and systematic method of investigation, that eager devotion to scientific pursuits of which they were the originators.

In this country we are accustomed to style Bacon, the "father of the Inductive Philosophy," and to honour him as the reviver of physical science and the founder of a new method of enquiry. But even if Bacon's claim to be the inventor of the logic of the sciences were more undisputable than it is, it is to mistake the province of philosophy to regard *him* as the founder of any science, who is only the interpreter of its logic. Neither in science, nor art, nor any other sphere of human activity is it the province of philosophy to create, but only to explain and rationalize the already existing matter on which it operates. It no more creates science than grammar creates language, or rhetoric eloquence, or than anatomy and physiology the power of digesting and using one's limbs. A single great poem, one living creation of genius fresh from the fount of inspiration would do more to rouse the latent instinct of art and evoke in men's minds the power of artistic production than all the æsthetic philosophies and treatises on criticism that were ever written. And in like manner, the true fathers of inductive science are not those who either in former days or in our own have expounded the logic of

induction, the principles and methods of scientific investigation, but those who, even before the time of Bacon,—like Copernicus, and Kepler, and Galileo, and our own countryman Gilbert,—not merely talked about discovery but discovered, not merely wrote eloquently about the experimental method, but by their own wonderful realization of it showed it to mankind in living activity, and so started the scientific life of the modern world. Bacon has been compared to the Hebrew prophet who pointed out afar off the promised land but was not himself permitted to enter therein. But even before he assumed the mantle of prophecy, Galileo and his contemporaries had by their own labours and writings become the founders of the modern sciences of Astronomy and Physics, of Mechanics, Hydrostatics, and even of Electricity and Magnetism; and thus, not content with a distant survey of the rich and fair domain, they had actually, as the leaders of a noble and uncounted host of conquerors, gone forth to take possession of the land.

But perhaps the most important element of that intellectual inheritance which we owe to them is this, that Galileo and the other revivers of science have created for us a new instrument of culture, a discipline of mind not less valuable in its own place than those which philosophy and classical literature supply. Why should theorists quarrel about the comparative advantages of a classical and scientific education?

Has not each of these its own function in the training of man's intellectual nature? Is there not room for both in the process of culture? In opposition to the fanatical upholders alike of the old and the new means of discipline, may we not maintain that both are best? It is surely but a cheap reputation for wisdom which is to be got by declaiming in the style we often hear against either—by pointing out, on the one hand, the folly of leaving a young man at the end of a long and elaborate education ignorant as a savage of the conditions and laws of the world in which he lives, and making the net result of all his school and college training the capacity to turn a neat copy of verses in a dead language, or perhaps in many cases only to spell out laboriously and inaccurately the meaning of a classical author; or, on the other hand, by telling us that the human spirit has higher capacities than can be fed by measuring heights and distances, arranging and ticketing stones and beetles in a glass case, or being able to tell that water is a mixture of hydrogen and oxygen. Surely the question, to confine ourselves to the point before us, which a wise man should ask is, whether in the study of the sciences of observation and experiment there is a kind of training for human intelligence which is not to be got elsewhere, or nowhere else so thoroughly and systematically?

It would be vain in the closing sentences of a lecture to enter on a subject so wide as the disciplinary function

of the study of physical science. But this, at least, I may find room to say, that whether a similar discipline may in some measure be found in other studies or not, it is unquestionable that in this study we are furnished with a means of gaining intellectual strength and preparation for the educated man's career in life such as it would be foolish to neglect. We are not all, or even the majority of us, to be men of science, but we all need the intellectual habits which the faithful study of science tends to foster. We are not all endowed with the same natural gifts, but—more even than original capacity—what distinguishes one man from another, and determines the greater or less success with which he shall play his part in the work of life, is the keenness and accuracy of his powers of observation, the practised ability to grasp the meaning of facts and to weigh the force of evidence. Half the weakness and perversity in the world arises from men's inability to *see* what is before their eyes, and the other half mainly from their incapacity to discern the meaning of what they see. In the business of life, in all spheres of human activity, there are multitudes who are the slaves of their eyes, the passive victims of outward impressions—who have never learned to fix their attention, who overlook half of what they see, or think they see what they do not see, or confound with what they have seen what they only imagine, or what other men tell them with an air of confidence that they

have seen. There are multitudes who in the ever-recurring exigencies of life—when the call arises for independent judgment or rapid decision and action, from the lack of trained habits of observation and inference, because, in other words, they have a reasoning machine which has never been habituated to move smoothly and rapidly—are for all effective work weak and useless.

Now just that intellectual lubrication, that rational gymnastic which such minds need, is supplied by a discipline in the methods, the problems, the processes of physical science. And I will venture to add that the true student of science will find in it a school, not merely of intellectual, but, what is even more valuable, of moral education. What wise parent in quest of a good place of education for his son would hesitate in his choice if he were told of a school where not only the best instruction was to be had, but where from day to day the untrained mind would be exercised in habits of patient industry, of exact and scrupulous regard for truth, of self-renunciation, superiority to prejudice, passion, self-will, of deference for unchangeable principles, combined with manly independence and self-reliance? And just such is the school for human intelligence which the study of nature offers us. For here, in the reading of her lessons, we may daily find at once that which tasks our utmost powers of patient

attention and most richly rewards the effort. Here we are in the presence of a teacher who demands the most rigorous exactitude, and yet who strips toil of its painfulness by the wonder and delight of the lessons we learn. Here we practically discover how submission is the pathway to freedom, renunciation to true power and greatness. In the contemplation of laws which our individual opinion can never alter or modify, we learn the necessity of renouncing prejudice and preconception, and yielding ourselves up with absolute submission to the revelations of an infallible authority; and yet, at the same time, by the awakened and ever-unfolding consciousness of a reason within us which is in sympathy with the ever-present reason and thought, the ordered sequence, harmony and beauty which we discern without us, and which at every new advance we make, flashes forth in fuller effulgence from behind the veil of the visible;—by this response of thought to thought and reason to reason, we learn to know something of the essential grandeur of our own nature, as sharing in that universal intelligence of which nature and all material things are but the partial and imperfect manifestation.

SCIENTIFIC CHARACTER OF BACON.

November 20, 1880.

In the addresses which I have delivered in former sessions I have tried to bring before you some typical specimens of the career of the scholar, the man of letters, the philosopher, the man of science —of those who in various departments of study have been our forerunners in the life of thought. Last session, as some of you may remember, I endeavoured to delineate the character and labours of one of the greatest of the pioneers of modern science. To-day I shall ask you to contemplate with me for a little the life and labours of one who, though neither a man of science nor a philosopher, strictly so called, has been long regarded as fulfilling a function common, in some sense, to both provinces,—that, as it may be described, of the Philosopher of Science. It is only indeed in a very limited sense that this title can be claimed for the author of the *Novum Organum* and the *De Augmentis Scientiarum*; for the relation of philo-

sophy to science embraces problems of a kind with which the peculiar genius of Lord Bacon did not lead him to grapple. But to him has been long ascribed the honour of being the first to investigate and expound the logic of science, the principles and methods of investigation which the inductive sciences call into play, and to the employment of which their wonderful progress during the last two centuries is to be traced. It is on this special ground that he has been styled Founder of the Inductive Philosophy; and if he really achieved what he has thus been credited with, even though the profounder and more comprehensive task of unfolding the speculative principles on which the methodology of the sciences is based lay beyond his reach, to that name he would justly be entitled. But whatever view we may take of the precise value of Bacon's labours, there can be no question that there are few names which represent subjects of thought of deeper and wider interest for the modern student, or from the study of which even an unskilled hand may more easily gather some profitable lessons.

My subject, then, to-day is the "Life and Works of Lord Bacon." If Bacon's character forms still one of the unsettled problems of history, it is certainly not for lack of materials for its solution. His voluminous scientific writings supply to all competent critics an ample measure of his powers on that

side of them on which his reputation chiefly rests; and if from works of a purely scientific nature we gain little insight into the personal character of their author, Bacon has not only written largely on subjects ethical, social, political, theological, in which the moral and spiritual nature is apt more or less clearly to reveal itself, but there is almost no other notable character in modern history on which the fierce light of critical investigation has been so fully concentrated. Not only has every act of his public life been examined with exhaustive scrutiny by biographers and historians, sympathetic and hostile; but, owing to one of his characteristic tendencies, he has lent himself to their purposes as few other public men have done.

Private letters and diaries are not always trustworthy exponents of character. Many men posture artificially, even in their familiar correspondence, and the moral sentiments and pious meditations of secret journals are not seldom composed with a half-conscious view to posthumous reputation and the purposes of the biographer. But, not to speak at present of Bacon's letters, it is impossible to doubt that his private note-books and journals are a genuine self-revelation. His cool, reticent nature cut him off from intimate personal relations with others, and through his long life of manifold social activities, he never had a single living confidant. But it was Bacon's constant habit, not indeed to think aloud, but to soliloquize pen in hand.

His views of men and things, what he thought of people he was daily associating with, hints for conversation at table, impromptus elaborately got up to be introduced on fitting occasions, suggestions for utilizing the idiosyncrasies of notable people, and playing on the weaknesses of placemen, statesmen, royal favourites, male and female, and even for the proper mixture of deference and freedom to suit the taste of royalty itself,—all this and much more, the sort of thing which most men would scarcely care to acknowledge to their own consciousness, Bacon sets down with undisguised simplicity in black and white. Surely never did human being submit his soul to more microscopic inspection, or more deliberately help the world to know all the littlenesses as well as the greatness of his nature.

Ample, however, as are the materials for a critical estimate of Bacon's character and life, their very abundance and variety has proved embarrassing to his critics. There can be no question that the fame of Bacon has suffered not a little from the fact that his career, in the multiplicity and variety of the details of it which have reached us, has presented a tempting subject to the lovers of paradox. From Pope, who never scrupled to sacrifice a character to an epigram, and whose chief delight it was to sum up a man's life and being in a ringing couplet or a smart antithesis, to Macaulay, who seldom can portray a

character without intensifying the lights and deepening the shadows, in order to produce the necessary effects for a clever review article, Bacon's life has been a favourite study for scene-painting biographers. It is always easier to paint a monster than, neither flattering nor setting down aught in malice, to give us the genuine portraiture of a man. Nor, indeed, can it be questioned that at first sight there is much in Bacon's many-sided character and history which lends itself to the hand of a limner to whom the former sort of work is congenial.

Bacon the philosopher of science, the author of the *De Augmentis* and *Novum Organum*, and Bacon the lawyer, politician, courtier; Bacon the high priest of nature, the herald of the new era of knowledge, inspired with a noble intellectual ardour, leading mankind back from the paths of error, and pointing the way to the kingdom of light and truth, and Bacon the subtle courtier, the ambitious, eager place-hunter, stooping to be jostled among the herd of time-servers and political lackeys in the courts of Elizabeth and James I.—seem to be not one man but two. In the one aspect of him we behold an intelligence of the highest order, conceiving and steadily pursuing all through life a project far in advance of his time, for the reorganization of the whole field of human knowledge; in the other aspect we seem to see the same intelligence busying itself with

the petty aims and struggles of the pushing political adventurer, restlessly contriving how to supplant rivals, to curry favour with the dispensers of patronage, to secure a place if even in the very outskirts of the sphere of office and court favour, rejoicing in the faintest recognition of royalty—of royalty in the person of a vain pedant, "the wisest fool in Christendom," and of a woman who combined, in advanced years, the watchful jealousy of a despot with the waywardness of a youthful coquette. View him only as a thinker, and all the qualities that attract reverence for intellectual greatness—enthusiastic ardour in the pursuit of truth, penetrating and prophetic insight, grasp and comprehensiveness of mind, and a certain noble audacity of speculation and irrepressible confidence in human progress—meet the eye. View him only as an actor on the stage of public life, at one of the most corrupt periods of England's political history, and it is possible to see in him only a clever, pliant man of the world, inspired with a somewhat vulgar ambition for the good things of life, yielding to the contaminating influences of the time, cold and somewhat faithless in his friendships, identifying himself with the measures of rulers conspicuous for their meanness, duplicity, and cruelty, and sacrificing his own self-respect, if not for worldly gain, at least to serve the ends of people who were not worthy, and whom he must have known not to be worthy, to untie his shoe-latchet.

Such, or something like this, are the materials from which it has been possible to produce the picture, full of coarsely-drawn contrasts, of glaring lights and ink-black shadows, Hyperion and Satyr combined, which popular writers have offered to us as the faithful representation of the character of Bacon. Even were it nearer the truth than it is, it is difficult to understand the strange zest which these writers seem to feel in exposing the weaknesses and inconsistencies of a great nature, and in ferreting out every obscure and doubtful detail by which the proof of his supposed infamy can be strengthened. There are those, indeed, who can find consolation for their own littleness in the failings of an exalted mind, and whose delight in this sort of morbid anatomy is not to be wondered at; but surely for those who, by their own acknowledgment, find in Bacon "the most exquisitely constructed intellect that has ever been bestowed on any of the children of men," the worthier attitude would be, instead of airing one's wit and fancy and fine-writing over the inconsistencies of greatness, if possible, to ignore and forget them, if not, to speak of them with a regret too profound for flippancy.

. . . "If such a man there be,
Who would not mourn that Atticus were he?"

It is not my purpose, nor would it be possible within the limits of a single lecture, to bring before

you the arguments and the evidence on which they rest, which, as they are set forth in Mr. Spedding's elaborate biography, have shaken, if not altogether subverted, the unfavourable view of Bacon's character with which brilliant but superficial writers had possessed the popular mind. It is Bacon's philosophy, or his character and merits as a scientific teacher, of which at present I desire specially to treat. Accordingly I shall content myself with a few remarks, first, on the relation of the character and life of Bacon to his philosophy; and, secondly, on that philosophy itself, its merits and results.

I. In reflecting on the bearing of Bacon's life on his philosophy, the question naturally suggests itself, whether his achievements as a philosopher would have been greater had his life been wholly devoted to philosophy. He was anything but a secluded thinker with no vocation but that of scientific investigation. If science, as he himself asserts, was his mistress, at first sight he seems to have been but an inconstant lover—content, at least, with but brief and infrequent interviews with the object of his adoration. His whole life, with but occasional intervals, was spent in the thick and throng of the world, amidst the exigencies of professional and public duty. He was a hard-working lawyer, first working his way by incessant study and application into practice; then acting as professional adviser of the crown, and finally, as Keeper

of the Seals and Lord Chancellor, getting through an amount of business, and with an exactness and despatch which were in his day unprecedented. He was a leading Member of Parliament, taking an active share in the discussion of all important public measures. He was a courtier whose time and thought were at the disposal of officials and of a royal master and mistress whose caprices and humours made the pursuit of court favour and preferment anything but a sinecure. From all these vocations and the various social demands involved in them, it was but fragments of his time and fag-ends of his thought which he could secure for literature and science. And yet in literature and science he worked harder and produced more than most men who have nothing else to do. Whatever the final verdict of criticism on the value of his philosophical and scientific labours, there can be no question that his productiveness as a writer was incessant and far beyond that of most men whose sole vocation was study, and that, whether his fame be justly earned or no, he achieved, and has long retained, the splendid reputation of the founder of the inductive philosophy, and as such, of the greatest contributor to the intellectual progress of mankind in modern times.

Regarding him, then, as a thinker and writer, was all this professional and public work sheer waste or malversation of intellectual power? Must we regret that so fine an instrument was set to do work so

coarse and unsuitable? Would he have done more and to more purpose in his proper calling of thinker and writer, if he had had nothing to do but think and write? Now there can be no doubt that for most minds of average, or even more than average ability, it is a wise advice to say, Find out your work and stick to it. There are many whose career has been marred or frustrated either by missing their true vocation, or by scattering their energies so as to achieve poor and partial success in several lines, rather than much or great success in one. The old story of the dilettante peer who was, at best, only a philosopher among lords and a lord among philosophers is often repeated. Was Bacon, then, one of these instances of misdirected energy?

If we are to take his own word for it, the answer would undoubtedly be that he was. "Many errors," says he (*Life*, iii. 253), "I do willingly acknowledge, and amongst the rest this great one that led the rest: that knowing myself by inward calling to be better fitted to hold a book than to play a part, I have led my life in civil causes for which I was not very fit by nature, and more unfit by preoccupation of mind." And again, in a prayer which he composed towards the close of his life, he confesses that "the talent of gifts and graces" which he had received he had "not put where it might have made best profit," but had "misspent in things for which he was least fit,

so that he might truly say, 'My soul hath been a stranger in the course of my pilgrimage.'"

Yet, it may be questioned whether in so writing Bacon judged himself truly or from a correct estimate of his own special aptitudes. At first sight it seems to go without saying that undivided application to study is most favourable to production. But, on the other hand, there are men whose temperament is such that activity of mind grows with the demands made upon it. Within certain limits, the mental stimulation of multifarious employments more than makes up for the loss of time they involve; and they do their very best in one particular line, not when they can give their whole time to it, but when they have many other things to do. Moreover, for some minds at least, the whet of society is indispensable in order to the attainment of the right temper and use of their powers. Men dream of the great things they would do if they could only command unbroken leisure for thought and study, but when the leisure comes the dream is seldom realized. And this, if we have regard to Bacon's special genius and capacities, would not unlikely have been the result in his case, had his longing, real or feigned, for escape from the toils of business and society been gratified. For, as we shall immediately attempt to show, his great strength as a thinker lay, not in the region of philosophy and speculation, but in that of practical ethics, and the

wisdom that is the outcome of much and varied experience and contact with the world. It may seem almost a heresy to say it, but I venture to affirm that Bacon's greatest and most characteristic work is not the *De Augmentis*, or the *Novum Organum*, or any of his purely scientific writings, but the *Essays*, and that even of his more ambitious works the most valuable element is the many incidental remarks and suggestions which constitute a kind of practical worldly wisdom or philosophy of common life.

Whatever may be said of Bacon's capacity to be the prophet of science, there can be but one opinion of his genius for the office of practical philosopher and professor of worldly wisdom. Nowhere perhaps in all literature ancient or modern can we find any other book which can be compared with Bacon's *Essays* as a manual of that wisdom which consists of the knowledge, not of man but of men—their tendencies, passions, prejudices, weaknesses; nowhere at any rate a book in which the whole experience of a most sagacious observer of human life is reproduced in such brief compass, expressed in language so packed with meaning, yet so sparkling with wit and fancy, grave humour, picturesque metaphor, and felicitous illustration. The *Essays* betray no talent for abstract speculation. There is no attempt in them at the exhaustive analysis of principles. The movement of thought is analogical rather than logical.

They consist, for the most part, of miscellaneous remarks on human conduct, on the motives, illusions, self-deceptions, jealousies, ambitions, failures, successes, of men in the various relations of life, of prudential maxims, hints for the dexterous management of individuals and classes, counsels for youth and age, for the married and single, for parents and children, suggestions for the attainment of success in life, and consolations for the lack of it—advices to all sorts of people, sometimes profound, always sagacious and sensible, set off by striking illustrations and apt historic allusions, and couched in a form of expression, quaint, pointed, picturesque, and in almost every sentence having the stamp of a strong and original nature upon it.

Now this obviously is a kind of philosophy which is not to be learnt in lettered retirement, but only through much converse with the world. If Bacon had fled, as he often threatened to do, from the distractions of public life to the seclusion of a college cloister, or to the solitude of his study and gardens at Gorhambury, we might have gained more cumbrous treatises on scientific method, and a fuller elaboration of his vast yet impracticable scheme for the reorganization of human knowledge; but we should never have possessed the less pretentious but, in its own way, more genuine philosophy, the distilled essence of worldly wisdom and practical common

sense which is preserved for us in the pages of the *Essays*.

II. I am warned by the lapse of time to omit what further observations I had intended to offer on the relation of Bacon's life to his philosophy, and must now ask your attention for a few minutes to that philosophy itself, its merits and defects.

The splendour of Bacon's fame as a philosophical thinker and writer is due, in some measure at least, to the fact that he reflects and represents the intellectual spirit of his time. To say this is not to detract from his just claim to honour, though it may abate somewhat the exaggerated reverence which the popular mind has long rendered to him as the originator of the inductive method, and the founder of experimental science. Even if the speculative value of his exposition of the method of the sciences had been greater than can now be conceded to it, to ascribe to him the origination of that method and the impulse from which the vast and brilliant results of scientific investigation during the last two centuries have emanated, is altogether to misconceive the nature of the relation between science and what may be called the philosophy of science. Philosophy is a later birth of time than action, philosophical method is not the parent but child of practical experience. The analysis of an art, the unveiling of the intellectual process which runs through and unconsciously regulates it,

is no mean achievement, nor one which is barren of practical results. But it is absurd to regard philosophical method as the creator of the art itself, or the guide to the right practice of it. Grammar comes after speech, logic after reasoning, prosody after poetry. Grammatical principles and rules may help children to correct blunders of speech, rules of logic may sometimes assist us to detect, or at least to give formal reasons for the exposure of paralogisms and fallacious arguments; rules of prosody may enable a boy to put the proper number of syllables into a hexameter line or to produce a technically correct copy of verses; but it would be ridiculous to say that the first philosophic grammarian founded the art of correct speaking and writing, that men first learnt from Aristotle how to reason, or that the treasures of poetic genius which the world possesses owe their origin to the man who first elaborated the principles and rules of versification. In all these cases men have acted before they began to philosophize on their acting. It is as certain that the power to practise an art and the actual experimental exercise of that power must precede the investigating and formulating of the principles that underlie it, as that eating, drinking and digesting must precede physiology, or that the exercise of the bodily functions must precede anatomy. In point of fact (as has been remarked), the age of the grammarians of classic literature was long subsequent to the time of its greatest

writers, nor can we suppose that Homer, or Sophocles, or Aeschylus ever formally studied Greek grammar or prosody, or that if they had done so, all their poetical triumphs must be traced back, if such a man had existed, to an early writer on the structure and grammar of the Greek language and the formal rules of fine writing.

And the same thing is true, *mutatis mutandis*, of the relation between science and the philosophy of science, between discovery and the reduction to rules of the method of scientific investigation. It is the scientific discoverer who comes first, and it is only later, and following in the wake of his movements, that the philosopher and logician gives speculative development to those methods of investigation which, by a kind of tact or instinct, the former has already pursued. It is not Bacon, but Copernicus, Galileo, Kepler, Gilbert, and others of that galaxy of experimental investigators, who, in obedience to a common impulse, had already, before Bacon took pen in hand, practised with splendid success what he preached,—it is they who must be regarded as the true originators of the great scientific revolution of the sixteenth century, and the forerunners of Newton and Leibnitz and Laplace, of Herschel and Faraday and Thomson, of that great intellectual host who in modern times have been the true interpreters of nature, and the practical asserters of man's dominion over her. To expound

the philosophy of nature and the principles of scientific method is, as I have said, no mean achievement, and it betrays prejudice and narrowness of mind in any man of science if he slights or contemns it; but the province to which this achievement belongs is speculative, not practical, and its influence on scientific investigation and discovery is, at best, only indirect. Even, therefore, if Bacon's attempt to methodize science, and to unfold the principles and laws of scientific investigation, had been perfectly successful, his claim to be the creator and guide of scientific enquiry is of precisely the same sort as would be the claim of a writer on logic and rhetoric to be the inspirer and guide of all the thinkers and orators whose writings have not sinned against the laws of reason, or whose eloquence has ever carried conviction to human minds.

But we must now go on to remark that Bacon's attempt to methodize science, judged by its own merits, was far from successful. The *Novum Organum* is, in many respects, a marvellous work to be produced by a man whose own scientific knowledge was very meagre, who was absolutely ignorant of mathematics and of the principles and methods of the mathematical sciences, and who never was at the pains to acquaint himself with the labours of the great natural philosophers of Italy and of his own country, and with the results in the domain of mechanics and physical science

already attained by them. What a powerful and comprehensive mind, fired with a genuine enthusiasm for knowledge, and a general conception of the right direction in which knowledge was to be sought, could achieve from materials so inadequate, Bacon has here accomplished. It was impossible for such a man to write so largely, on whatever subject, and with whatever design, without writing much that is instructive and interesting. And this great work is full of sage remarks, of knowledge of the human mind both in its weakness and its strength, and of acute incidental observations on all sorts of subjects; and it is pervaded by a noble ardour and loftiness of spirit, a grave yet intense enthusiasm for science, and a certain prophetic faith in the intellectual future of humanity.

But, estimated from a strictly scientific point of view, it has all the imperfection from which even the greatest mind, working with inadequate preparation, cannot escape. The method of scientific investigation which it propounds is one which no man of science has ever followed or could follow, the rules deduced from it are impracticable, and the ends at which it aims by the application of that method are chimerical and illusory. Let me try very briefly to show that it is so. Bacon's avowed aim, which in the *Novum Organum* he supposed himself to have realized, was to furnish mankind with a new and infallible method of discovery, by which the difficulties of scientific investi-

gation should be, in a great measure, overcome, and the whole field of knowledge at no distant day explored. But the most striking advantage of this supposed method or instrument of discovery was, as its author conceived, that it would supersede inventive genius in science, and, in the work of investigation, confer on the most ordinary the same power with the highest minds. When we attempt to draw a circle with the unaided hand, the diversities of manual skill come out in the result, but with a pair of compasses all men can describe circles with equal exactitude, and the skilled draftsman has no advantage over others. So for his *Novum Organum* Bacon claimed the extraordinary merit of endowing all men of ordinary attention and industry with a capacity of penetrating into nature's secrets which should leave no room for disparities of intelligence.

It is needless to say that the history of scientific discovery since his day has proved the futility of any such notion as this levelling up or down of intellectual differences in the domain of physical enquiry. Great discoverers can no more be artificially manufactured than great poets or historians or philosophers. In science, as in other departments of human activity, there is room for the useful functions of the hewers of wood and drawers of water, as well as for that of the higher and more gifted intelligences; but the distinction in the kind

and value of their work between these two classes still remains, and if the last two centuries have been signalized by the splendid advances which have been made in all departments of physical enquiry, that result is due mainly to the vast amount of intellectual ability and application which science has called forth.

But when we go on to consider what was Bacon's conception of the nature of science and of the problems which it seeks to solve, we are no longer surprised at the artificial character of his method and the exaggerated anticipations he entertained of its success. If the system of nature were what Bacon supposed it to be, it would be a comparatively easy thing for the dullest mind, once possessed of the key which his method supplies, to read off her most hidden secrets. The whole physical world, with all the infinite variety of objects it contains, he conceived to consist of a limited number of simple elements or qualities variously combined, just as, according to his own comparison, the countless multiplicity of words in a language are only various combinations of the small number of letters which compose its alphabet. And as the knowledge of the alphabet enables us to understand the composition of every word, so all that was necessary in order to the complete knowledge of all concrete objects in nature was simply to get hold of her simple elementary

qualities; nay, as he who knows the alphabet and the laws of spelling and syntax, can not only read, but reproduce the words and sentences, so he seems to have supposed that the grammar of nature thus learned would make a man master of nature, and enable him to reproduce and modify her substances at will. "The forms" (or immanent causes), says he, "of motion, of vegetation, of gravity and levity, of density and tenuity, of heat, of cold, and all other natures and qualities, like an alphabet, are not many; and of these the essences upheld by matter of all creatures do consist." "The simple forms or differences of things are few in number, and the degrees and co-ordinations thereof make all this variety." "Gold," for example, he says, "has these natures, greatness of weight, closeness of parts, fixation, pliantness or softness, immunity from rust, colour or tincture of yellow. Therefore the sure way to make gold is to know the causes of the several natures before rehearsed. For if a man can make a metal that hath all these properties, let men dispute whether it be gold or no."

This, then, being his conception of nature, the problem of science became a comparatively simple one, and the solution of it, in every case, a purely mechanical or artificial process. The rules of investigation and discovery are as capable of being formulated and preached as the rule of three or the method of extracting the square root, or the way in which an

apothecary mixes up the ingredients of a doctor's prescription. What you have to do in order to discover the cause of a given phenomenon is, first, to make a collection of facts or instances in which the phenomenon in question is present, then another collection of instances in which it is absent, and finally one in which it is present in various degrees of intensity; and then, by careful elimination or exclusion of irrelevant causes, you will necessarily come to detect in the residuum, in the cause or element which is left, that cause of which you are in quest. With all its vast parade of terms and distinctions, Bacon's method of finding out the causes of phenomena comes to little more than such a direction as this for discovering the author, say, of a disturbance at a public meeting. First, find out a number of instances in which this fellow along with others was present at public meetings when a row took place; secondly, find out a number of other instances of meetings in which all these other people were present, but not he, and no row took place; then by the method of exclusion or elimination it is quite clear that he must have been the creator of the row.

It is impossible in this brief sketch to give a more detailed account of Bacon's method, or even to notice the objections which have been urged against it in recent times. I must content myself

with this single remark, that the problem which meets the scientific enquirer is a very different one from that which Bacon conceived it to be, and one to which his short and easy method is, in the great majority of cases, inapplicable. In a scientific investigation the desired result is seldom, if ever, one which can be reached merely by a process of elimination or exclusion. It can only be so reached in those cases in which a concrete or complex phenomenon is the combined result of a number of *known* agents, and in which, in order to ascertain what part of that result is due to any one of these agents, it is possible to deduct the known effects of all the rest. But not only are there innumerable cases in which a particular effect is due, not to a single cause, but to the concurrent action of a plurality of causes; but, in general, it is to be considered that Bacon's method presupposes that all the agents to which a given result is due are known, and what we do is simply to ascribe the residuary part of the result, by elimination, to one of these agents; and he takes no account of the fact that the process of discovery, where its results are most valuable, does not consist in rejecting from a number of known causes all but one, but in rising by the penetrative insight or divination of the scientific mind from a multiplicity of apparently discordant facts and phenomena to the idea of a hitherto *unknown* law or relation which harmonizes and explains them—

a process which implies an attitude of mind quite beyond the compass of the ordinary observer.

When once the unknown element, the law or relation, has been discovered, it is a very easy matter to pronounce, among the complex phenomena before us, how much is due to it and how much to other concurrent conditions; but the latter operation, which is all that Bacon's method includes, presupposes the former; that is, presupposes that the discovery to which it is to lead us is already made. Even if there were any truth in Bacon's notion of an alphabet of nature, it would no more furnish its possessor with inventive power, or the capacity of attaining scientific knowledge, than the ability to repeat the A, B, C of a language gives a child the capacity to understand the profoundest works which its literature contains, or qualifies him, by dexterous manipulation and combination of the letters, to reproduce these works. When we have mastered the orthography or even the grammar of a language in which a great book is written, we are a long way from an intelligent appreciation of its contents, a much longer way from the capacity to write such a book. And as it is not the collocation of letters or words, but the ideas, the hidden element of thought that expresses itself through the verbal symbols and links them together in a spiritual order, which is the true key to the significance of a book; so, in deciphering the volume of nature,

that which is the main function of the scientific discoverer, that which made Kepler and Galileo and Newton masters in scientific research, was not the mere capacity to observe and manipulate facts according to a cut-and-dry system of rules, but the capacity, along with accurate and comprehensive powers of observation, to grasp the hidden conception which the facts had never hinted to other eyes, to make the dumb, disjointed symbols articulate with the living rhythm of law, and over the hitherto obscure or meaningless page of the book of nature to shed the light of intelligible order and system. In one word, not only do we know, in point of fact, that neither Bacon himself nor any other man ever made a single scientific discovery, great or little, by means of his so-called new organon of science, but we know that from the very nature of the case they never could. Neither this nor any other machinery of technical rules could have enabled Newton to write the *Principia* any more than it could have qualified Homer to write the *Iliad*, or Plato the *Republic*, or Milton the *Paradise Lost*. Whatever incidental merit it possesses, the *Novum Organum*, so far as science is concerned, is but the record of vast yet misdirected and abortive labour—a *splendid* failure, it may be, but still a failure.

And now, lastly, if Bacon's greatness was not that either of the man of science or of the philosopher of

science, what, we are led to ask, in relation to science and scientific investigation, is his true title to fame? One answer which has been given to this question by a very popular writer already referred to, is that the special and characteristic merit of Bacon's philosophy is that in all his speculations he aimed at practical *utility*. He sought to bring science down from the clouds, and to make it useful to man. Insight into nature has, as its sole and supreme end, command over nature for the service of man. Knowledge is to be sought after because it enables man to turn physical forces into agents for human uses. His imagination had been kindled by those inventions, such as the art of printing, gunpowder, the mariner's compass, which had already so wonderfully contributed to the extension of man's power and dignity, and the convenience and comfort of human life; and his supreme endeavour was, by a new and infallible method, to enable inventors to do systematically what they had hitherto accomplished by happy accidents. Instead of lighting occasionally on ingenious contrivances, with this instrument in hand they would go forth with a kind of mechanical certainty to turn the knowledge of nature into command over nature, and to render all the forces and laws of the physical world subservient to the satisfaction of man's wants, the multiplying of his pleasures, and even the prolongation of his life. And this practical aim, in contrast with the merely

theoretic and therefore useless character of the philosophy of preceding ages, constitutes the great and imperishable title of its author to human reverence and gratitude.

Nor can we wonder that this should, in Macaulay's view, be the main excellence of Bacon's philosophy, seeing his criterion of philosophical merit leads him to regard the first shoemaker as a greater benefactor of mankind than Seneca. "If," says he, "we are to make our choice between the first shoemaker and the author of the three Books On Anger, we pronounce for the shoemaker. It may be worse to be angry than wet. But shoes have kept millions from being wet, and we doubt whether Seneca ever kept any one from being angry,"—an illustration which tempts us to enquire whether, on the same principle, Macaulay would have regarded the maker of shoes as a greater man and of juster title to human reverence than the writer of sparkling review articles and popular books of history.

But even if this account of Bacon's philosophy were more accurate than we believe it to be, it is not in regarding utility as the supreme end of science that we can find his highest claim to honour. To set up practical utility as the aim and criterion of science would be a more misleading idol than any of those against which Bacon warns us. If knowledge is valuable only in so far as it can be shown to con-

tribute to the material uses and advantages of life, half at least of the intellectual possessions of mankind, including the greatest, or what men have consented to regard as the greatest, books in ancient and modern literature, must be consigned to the waste-basket. By an unconscious, but wise and rational instinct, men in all ages have exalted knowledge to a higher place in the scale of excellence than any material pleasures or advantages to which knowledge can contribute. They have regarded the scientific impulse, the desire to know, to bring human intelligence into converse with truth, as that which is noblest in our nature, as the very image of God impressed upon it. In art, in science, in religion, the highest minds have ever regarded the communion of thought with what is true and fair and good, as precious in itself, and not in order to any ulterior advantages, least of all to the gratification of bodily appetites and the securing of physical comfort. It has been their profound belief, that if the whole world were made materially comfortable, if everybody were secure of three meals a day, and of food, clothing, and all sorts of sensuous enjoyments, there would still be a part of man's nature, a capacity or desire more essential to its completeness, left unappeased, and whose unsatisfied cravings would leave him miserable as well as contemptible amidst all his comforts. It is no paradox to say that, even in the proper domain of science, to

know nature and her laws is a nobler thing than to extract physical gain or enjoyment out of them; and in another and higher province inspired lips have taught us not that we must know and believe in order to be safe and happy, but that "*this is* life eternal, to know Thee the true God."

But if not to the utilitarian aim of his philosophy, to what else can Bacon's world-wide fame be justly ascribed? I answer that, though we cannot acknowledge him as the founder or the philosopher of experimental science, he may, at least, be designated the greatest of its prophets. "It is not," says Sir John Herschel, "the introduction of inductive reasoning, as a new and hitherto untried process, which characterizes the Baconian philosophy, but his keen perception, and his broad, spirit-stirring, almost enthusiastic announcement of its paramount importance, as the alpha and omega of science." And this is, perhaps, the view to which all competent judges would now be disposed to assent.

In all great revolutions—social, scientific, religious—there is need, not only for the profound intelligence which grasps the new principles and laboriously works out their results, but also for the inspired mind that can apprehend their general significance, and the eloquent tongue that can proclaim and popularize them. His is no mean office, but rather a function second only to that of the creator of a new era, who

can comprehend its magnitude, and with lofty eloquence rouse the world to the appreciation of it. In our day, the freedom of science, like the freedom of the press or the liberty of the subject, has become a theme only for schoolboy rhetoric; but in the time of Bacon, science was only beginning to realize and rejoice in its emancipation, at once from the authority of Aristotle and from the more oppressive and deadening authority of the traditions and dogmas of the Church; and it was a task worthy of the best intellects of the day to give articulate expression to the new-born sense of liberty, and to warn men against the idols which had hitherto enslaved them. To the modern mind, again, it seems a mere truism to say that, for the knowledge of nature, we must look to nature herself, that observation and experiment, and not *à priori* reasonings, are the true instruments of investigation, and that it is by careful inductions from observed facts, and not by deduction from principles arbitrarily assumed or based on slight and inadequate observation, that we can frame our theories as to the laws of the natural world.

But what are truisms to us were the startling novelties of the time of which we write, or, at most, ideas which had only recently dawned upon the most advanced minds, of the truth of which even the educated world was only half-convinced, and the significance and fruitfulness of which only a few had been able to appreciate. Of these few, and of the

thoughts and anticipations with which they were inspired, Bacon was the greatest representative and exponent. Like them he saw the ancient reign of night and darkness passing away, he perceived, in the morning light of a new day, a world boundless and inexhaustible in its yet unexplored resources stretching away before him; and of the joyous awakening, the sanguine hopes, the intellectual ardour of conquest, with which these sons of the light were filled, no voice was found to give more expressive and jubilant utterance than the voice of Bacon. It is no slight honour to ascribe to the great prophet of the new time, that in his own day he arrested by his commanding eloquence the attention of multitudes who knew not, or took little note, of the intellectual revolution that was taking place around them, and that in our own time, with all the immense advancement which scientific knowledge and scientific method have gained from centuries of experience, there are many of the stirring utterances of that long-silent voice to which mankind have not ceased to listen.

In conclusion, let me say in a single sentence, that for all educated men (and especially for those whose work in life is implicated with the advancement of knowledge and the intellectual progress of the world), there is one reflection which, perhaps more emphatically than any other, the life of Bacon suggests. It is easy to say that science should purify and ennoble the

life, that intellectual pursuits should raise us above vulgar aims and mean ambitions, make us no longer the slaves of our own senses or of the opinions of men, and by supplying us with resources which custom cannot stale nor age wither, nor the changes and troubles of life affect, should communicate to us a noble independence of spirit. This, however, is a philosophy which it is easier to preach than to practise, and the contemplation of one living example of it is more persuasive than a thousand homilies. The admirer of Bacon's genius must sadly acknowledge that in him that example loses something of its ideal clearness and force. But though we cannot aver that in his case science and philosophy lent uniform dignity and elevation to life, this at least we can say, that in him we have an example of the happiness which intellectual pursuits can diffuse through a life otherwise chequered and troubled. Never has there lived a human soul in which the love of knowledge glowed with a purer and more inextinguishable ardour; never another human life in which science proved more signally its power to satisfy, to support, to console, to dull the sting of care, to make the heart serene amidst outward disasters and misfortunes, and even to render social infamy and dishonour not intolerable. Simulation, policy, ambiguity, were but too familiar to his lips, but *then* at least there is ever the unmistakable ring of sincerity in his words, when he celebrates the

glories of science and the triumphs it is destined to achieve. In that placid nature, that cold and unimpassioned heart, a stranger to human tenderness, and in which even religion woke no sentiment but that of a rational conviction, there was one emotion —the love of knowledge—which kindled into a fervour more intense than love or patriotism or devotion in other men. Wealth, place, preferment, the gauds and shows of the world, he had sought; but the deepest place in his heart after all was not for these. And when these failed him, when the edifice of worldly greatness he had laboriously reared lay crumbling around his feet, when, in age and sickness and disappointment, all the joy seemed gone from life, he turned with an almost new-born youthful avidity, to find in study and investigation a still unfailing source of interest and delight. As we close our review of a career, lofty and splendid indeed, but whose splendour is shadowed and softened by an almost pathetic human interest, may I venture to express the hope that, though remote from the experience of any of us may be either the perilous greatness of the path he trod, or the temptations to which even his great spirit succumbed, we may at least catch some spark of intellectual ardour from the inspiration of his genius, some touch of sympathy with that indomitable devotion to truth and knowledge which, despite of all anomalies and imperfections, has made his an immortal name.

DAVID HUME.

November 5, 1881.

In the history of human thought the sceptic has had a by no means unimportant part to play. If we take the designation in the popular sense, as meaning simply one who doubts or denies established or generally accepted beliefs, the truth of this proposition is beyond question. The convictions we most cherish, if they are worthy of the name, owe not a little of their strength to those who have disputed or rejected them. In the court of reason the *advocatus diaboli* has a useful function to perform. And this comes about, not merely from the fact that an opinion or belief gains in strength by resistance to skilful attacks, but also and mainly because current beliefs have in many minds either no rational basis, or, though true in themselves, are assented to on grounds that are erroneous and untenable. It is at least a negative service which the dexterous assailant renders to us, even if he only awaken us to the con-

sciousness of insecurity, and set us on the search after a firmer ground of certitude. From the nature of the thing, common or generally accepted opinions are, for the majority, unsifted opinions. It needs little reflection to see how large an element of what passes for knowledge is of that spurious kind which is begotten, not of rational enquiry, but of custom or conformity. In politics, in philosophy, in theology and other provinces, he is a rarely fortunate man who can always give a reason for the faith that is in him. Even intelligent and educated minds are often really active only within the limits of their own special vocation or line of study, and outside of that are unconsciously moulded by the intellectual atmosphere in which they live. They are liberals or conservatives, idealists or materialists, latitudinarians or dogmatists, of this or that ecclesiastical or theological creed, not as the result of any process of deliberate investigation, but by the accident of birth or education, and the silent insensible force of custom and association. And these arbitrary influences obviously reach their maximum in the case of notions which are the common, or all but universal, beliefs of our time. That the earth is stationary and the sun and stars go round it, that the world was made out of nothing about three thousand years ago, that it is a Christian duty to persecute heretics, that witchcraft is a possible and

penal offence, that the slave-trade is an honest as well as lucrative employment, that duelling is a kind of murder incumbent on men of honour—these and many other propositions men for ages seemed to themselves to believe, with a conviction which it would have appeared as foolish to question as it would be now to assert. And though, in the progress of intelligence, these particular notions have long been exploded, he would be a credulous man who would claim for his own age absolute superiority to unconscious errors, or think that the general prevalence of a notion is a security against its detected fallacy in all future times.

Now whether the sceptic be right or wrong, one great service which he renders to society is, that he awakens reflection and forces men to consider how far their unquestioned beliefs have no surer basis than tradition and custom. Of course, if it turns out that the notion he attacked is altogether erroneous, our debt of gratitude is greatest, as being that which we owe to the man who delivers us from the bondage of falsehood. But a belief may be inherently true and yet not true to us. We may hold without reason that which is in itself rational, or our belief in it may be based on weak and untenable grounds. The conclusion may be right but the premisses by which we reach it wrong. In both these cases, the assailant confers on us an inestimable benefit by revealing to us our

intellectual insecurity—by cutting us away from our unsafe anchorage and sending us in quest of firmer moorings.

And this service is not less real, even when it is the manifest intention of the sceptic to subvert our faith in the truths he controverts. It is possible that some of those writers who in former times exposed the absurdity of the notion of the divine right of kings, were inspired by a hatred of monarchical institutions; yet so far from proving the enemies, by removing a weak and futile defence, and throwing the burden of proof on better arguments, they were the involuntary friends and upholders of monarchy. In like manner, in more sacred matters, it may be with an only slightly veiled atheistic design that a writer attacks certain popular and plausible arguments for the being of God; but if what these arguments really proved was not God, but only a *deus ex machina* or an anthropomorphic idol which the current natural theology had put in his place, then never had the advocates of a true theism more real though involuntary helpers than those whose unsparing logic shatters the so-called proofs of the existence of God. Thus the aim of the sceptic may be destructive, yet the ultimate result of his efforts constructive. He may intend to pull down the building, whilst in point of fact he is only destroying the rotten props and unsound buttresses by which it seemed to be upheld. He may flatter

himself that he has wholly obliterated the record of eternal truth graven by the finger of God; but all he does is only to remove the green mould that had gathered over it, or the spurious additions that had distorted its meaning.

It is from such considerations as these that I have been led to the selection of the subject of the present lecture. I wish to bring before you to-day a brief account of the life and teaching of one of the greatest iconoclasts of modern times—a thinker, in some respects, in advance of his own time, and whose influence, whether directly or indirectly—by the impulse which he gave to speculative thought, or by the new methods and points of view to which, in the reaction from his doctrines, later investigators have been led—has been probably greater and more lasting than that of any other modern philosophic writer. Whatever may be thought of his theological or anti-theological speculations—and on these I shall not venture to touch—no student of philosophy—unless he is content to overlook one of the most important stages in the progress of thought, and to neglect the writer who gave the death-blow to one school of philosophy and was indirectly the creator of another—can afford to be ignorant of the philosophic teaching of David Hume.

In some cases the outward life of a writer has for his readers a deeper than merely biographic interest. It is natural that we should wish to know something

of the life and fortunes of one whose writings have interested or instructed us. But beyond this general human interest which they possess for us, there are some writers whose life and thought are so closely interwoven, who so live their thoughts or think their lives, that each reflects light on the other, and neither can be thoroughly comprehended apart from the other. This is only partially true in the case before us. In science and philosophy a man's contributions to knowledge have a value which is quite independent of his personality. Whoever invented the differential calculus or the binomial theorem, we shall not understand them any better by learning when or where the discoverer lived, or what manner of man outwardly he was. Whether nominalism or realism is the truer philosophic stand-point, whether thought is a function of matter or matter has no existence except for thought—these and the like are questions which are capable of investigation on their own merits; and it affords no help to their solution to know where the originator, defender or impugner of any of them was born, and how long he lived, whether his person was comely or homely, whether he was happy in his married life, or lived and died in single blessedness.

But in the particular instance before us, this reciprocal independence of life and teaching is unusually marked. In Hume, indeed, there is in some

respects a singular contrast between the literary and the personal life. Perhaps in this point of view, though in no other, the nearest approach to him was in the case of his not less famous contemporary, Dr. Johnson, who personally and in social life was one of the most undeferential and incredulous of men, dearly loving an argument merely for the sake of the fight, indifferent which side he espoused, and almost brutally sceptical of unsifted assertions and facts outside of common experience; and yet whose main characteristic as an author is that of an intolerant stickler for authority, an absolutely uncritical acceptor of traditionary dogmas, and a laborious expounder of intellectual common-places.

In Hume the contrast, though it runs in the opposite way, is not less remarkable. He was probably the worst-hated author and the best-liked and most likeable man of his day—the greatest of polemics and the most amiable and tolerant of human beings. He tells us in one of his letters that he "possessed the love of all men, except all the Tories, all the Whigs, and all the Christians"—a pretty wide catalogue of eliminations. He seldom took up his pen save to expose the nakedness of some respectable tradition, to lacerate the dearest prejudices of some school or sect, or to rub some sensitive dogmatist against the grain. Yet, in private life, by universal testimony nobody could come near him without liking him.

Not only did his intellectual resources, his wit, his playfulness, his power of repartee, make him a delightful conversationist and companion; but his sweetness of nature and evenness of temper, his tact, his avoidance of disagreeable or disputed topics, his almost feminine gentleness and courtesy of manner, disarmed opposition and drew to him a circle of attached friends, including many who by profession and conviction were his avowed intellectual antagonists. As an author, he himself acknowledges that his leading passion was the love of fame, and his letters are full of the author's sensitiveness to public opinion, and of expressions of wounded sensibility when his appetite for distinction was not fed up to the full measure of his expectations. But by the common consent of his contemporaries and intimates, he was, in private life, the most self-effacing of men, modest, unobtrusive, never seeking to shine, and, whoever formed the company, ready to take and give as the talk went round. He carried his courtesy, indeed, to the verge of insincerity. At any rate, it needs a careful study of his idiosyncrasy to understand how the philosophic and religious sceptic could choose ministers of religion for his bosom friends and be a constant and decorous attender on the services of the Church.

Though, however, Hume's main contributions to literature have little direct relation to his personality, there are some of his writings which cannot be so well

appreciated without knowing something of the career and character of the man; and for this and other reasons, a brief glance at the leading incidents of his life may not be without its interest for the student of his works.

Hume was born in Edinburgh in 1711. His father was a Scotch laird, the proprietor of a small estate in Berwickshire; and his biographers have not neglected to tell us that the family were remotely connected with the ancient line of the Homes of Douglas. I suppose, however, that most sensible people will be disposed to think that the philosopher's fame owes little to his distant connection with a line of rude feudal Barons, or rather, that Hume's name reflects more glory on his tribe than all the aristocratic nobodies that ever belonged to it.

Of his early years we know nothing, save that he studied at the University of Edinburgh, and had finished his college education at an age earlier than even the too juvenile period of life at which most modern students commence it. Wherever he got his knowledge, he proved himself afterwards a widely-read classical scholar; and though his writings owe little in substance to Greek or Roman philosophy, yet in their graceful clearness and elegance of style we can discern no indistinct reflexion of classical models. From the very outset of his intellectual life there are indications that the bent of his mind was towards that

province of thought in which his brightest laurels were afterwards won. But the circumstances of his family were straitened, and philosophy was not in his day, any more than it is in our own, a paying trade.

Certain abortive attempts were made to fix him to a profession. He tried for a short time, first law, and then mercantile business; and it was probably the impossibility of getting him to settle down to either in preference to those unremunerative studies in which his true vocation lay, that drew forth his mother's often-quoted criticism of her son's character. Mothers are, generally, not disposed to err on the side of blindness to the precocity of their offspring, and Hume's mother is said to have been a sagacious woman. But her sagacity was certainly at fault when she pronounced that "Davie was a fine, good-natured crater, but uncommon wake-minded." The maternal verdict was soon and sufficiently refuted by the fact that, after a year or two of hard reading and thought at home, and three years' residence in France (of the details of which we know little), he produced at the age of twenty-four the greater part of his *Treatise on Human Nature*, the work on which undoubtedly his philosophic fame rests, and which contains the essence of all his contributions to speculative thought. The imperfect success of this his first work, induced him, as is well known, some years afterwards, to recast and reproduce it in a form, as he supposed, better adapted

to the public taste. But the fundamental principles of the early work remain unmodified in the *Philosophical Essays* (afterward entitled *Inquiries concerning the Human Understanding*); and all competent critics are at one in the opinion that neither in substance nor in form is the revised work an improvement on the original.

The reasons which led Hume to undertake what to most writers is the very irksome and repulsive task of revision and reconstruction, are very characteristic; and we need go no further to understand why the result could not be other than it was. He had been eager for notoriety and literary success, and they had not come. He had intended to astonish the world by the daring character of his speculations, and the world refused to be astonished. "Every one," he says in an early letter, describing his literary projects, "every one who is acquainted either with the philosophers or critics, knows that there is nothing yet established in either of these two sciences, and that they contain little more than endless disputes even in the most fundamental articles. Upon examination of these I found a certain boldness of temper growing in me, which was not inclined to submit to any authority in these subjects, but led me to seek out some new medium by which truth might be established. After much study and reflection there seemed to be opened up to me a new scene of thought, which transported me beyond

measure and made me throw up every other plan or business to apply entirely to it."

The work which, in fulfilment of this design, he produced, was one well calculated not merely to attract the attention and interest of philosophical thinkers, but to excite in the ecclesiastical world the alarm and animosity of those who were capable of understanding the logical bearing of his principles. So far, however, from creating a revolution in philosophy, or from rousing the ire of theologians, his book, at first, scarcely attracted any notice whatever. "Never literary attempt," says he, with some little exaggeration due to modified ambition, "was more unfortunate. It fell dead-born from the press, without reaching such distinction as even to excite a murmur among the zealots."

The true cause of the failure, in so far as lack of immediate success is equivalent to failure, is not far to seek. The public to which such works are addressed is, even in our own day, a limited one, and one hundred and fifty years ago it must have been smaller still. Psychology and metaphysics, philosophical analysis and subtle dialectics, are not the kind of food in which even the so-called "educated world" takes much delight. The taste of the last-century public was not, indeed, squeamish; much of the literature it absorbed, many of the books that were universally read by both sexes, would now scarcely find a respectable publisher. Readers of

books in those days seem almost to have regulated their literary diet by the maxim, "Eat that which is sold in the shambles, asking no question for conscience sake." And, doubtless, then as now, people liked to be shocked; and if a writer's aim were to create a sensation and sell his book, a strongly-spiced attack on received opinions would have been sure of immediate, if ephemeral, success. But to produce that result the writer, in Hume's day as in ours, must appeal to the average intelligence of the British public. In vain will he court alarm by the most revolutionary teaching that is veiled in abstract principles, or by heresy that retreats into the covert of metaphysic, and leaves no palpable trail of itself across the common beliefs of society. In the long run, indeed, a great book, however subtle its matter or severe and unpopular its form, is pretty sure of success, and its influence will be all the more permanent that it goes to the root of the matter. But the writer of such a book must put far from him the desire of immediate popularity; and for fame, if in any way that may be his motive, he must be content to wait. The author of the *Treatise on Human Nature* could well have afforded to practise this self-restraint; but he was not content to wait, and the remodelled publication is the result of his impatience.

In the *Inquiry* the alterations are precisely those which might be expected from the motives just indi-

cated. There are almost no additions to the earlier work, and no such modification or development of its principles as riper thought and meditation might have suggested. There is not even an attempt to answer objections or meet difficulties; but, to make the book less hard reading, the simple expedients are adopted, first, of leaving out the parts at which an ordinary reader would be most likely to boggle, and secondly, of smartening and touching up the natural, unpretending, if somewhat severe style in which his thoughts first clothed themselves, into a brilliancy which, if it makes the book a better work of art, rather hinders than helps our appreciation of the substance which the fine raiment covers. Moreover, there is one remarkable addition to the matter, viz., the disquisition on Miracles—an addition the motive of which it is perhaps not censorious to find in Hume's determination not a second time to miss that "murmur of the zealots," which, in the first instance, he had failed to provoke. After what has been said, we need not wonder that impartial criticism has reversed his own verdict on the comparative merits of the redaction and the original work; that, to find Hume at his best, we must still repair to the latter, and that, whilst the weaknesses of his system are common to both, it is, whether he himself knew it or not, in the *Treatise* that as a philosopher his great strength lies.

It would unduly protract this lecture to go into a detailed account of his literary life, and of the works, philosophical, political, historical, which in rapid succession came from his prolific pen. Of his historical work, its merits and defects, my present purpose does not call me to treat. His career as a philosophical writer is embraced within the period from 1739, when the *Treatise* appeared, to 1751, when he published his *Political Discourses*, constituting the third volume of the *Essays, Moral and Political*, and wrote the well-known *Dialogues on Natural Religion*, which, however, did not appear in print till after his death.

His outward life, for the greater part of it, was a very uneventful one. His equanimity of temper would probably have made the cares of life sit easy on him, and have enabled him to bear calmly even great hardships and trials. But his fortitude was never put to the test. Good health, easy circumstances, literary labours in which he found never-failing enjoyment, which never overtaxed his powers, and which brought him gradually reputation and wealth—these, combined with social qualities which brightened his hours of relaxation, and an utter absence of morbidness or inequality of temperament, made the current of Hume's life flow through long years with almost unruffled smoothness. "I must esteem myself," he tells us, "one of the happy and

fortunate; and so far from being willing to draw my ticket over again in the lottery of life, there are very few prizes with which I would make an exchange." In another of his letters he gives us the following half-playful, half-serious summary of the constituents of human happiness which had fallen to his lot: "I shall exult and triumph to you a little that I have now at last . . . arrived at the dignity of being a householder. About seven months ago, I got a house of my own, and completed a regular family, consisting of a head, viz., myself, and two inferior members, a maid and a cat. My sister has since joined me, and keeps me company. With frugality I can reach, I find, cleanliness, warmth, light, plenty, and contentment. What would you have more? Independence? I have it in a supreme degree. Honour? That is not altogether wanting. Grace? That will come in time. A wife? That is none of the indispensable requisites of life. Books? That *is* one of them, and I have more than I can use. In short, I cannot find any blessing of consequence which I am not possessed of in a greater or less degree; and without any great effort of philosophy, I may be easy and satisfied."[1]

For ten years after these words were written this tranquil student-life suffered no interruption, unless we can so term his appointment to the unremunera-

[1] Burton, I. 377.

tive, but for a literary man very convenient, post of Librarian to the Advocates' Library, and his unsuccessful attempt to succeed his friend Adam Smith in the Logic Chair of this University. A Mr. Clow, unknown to fame by any other title, has been rescued from oblivion by the fact that the patrons of a Scotch University deemed his philosophical merits superior to those of David Hume. The first serious break in the even tenor of his life was his acceptance in 1763 of the appointment of Secretary to the French Embassy, at the urgent request of the Ambassador, Lord Hertford. Philosophers are perhaps not often good business men. The popular notion of a philosopher is probably that of a bemused, unpractical recluse, harmlessly busying himself with abstruse speculations, who can scarcely manage his own private affairs, and even sometimes needs to be closely looked after by his friends. However inadequate this notion may be, it must be admitted that powers of analysis and generalization, and a tendency to recur on all occasions to wide theories and general principles, are often a hindrance rather than a help to practical politics and the transaction of business. On the other hand, much inferior powers—tact, ready-wittedness, intuitive insight, the dexterity produced by experience of affairs—may equip a man of ordinary ability for the conduct of business better than philosophic depth and large scientific acquirements. But, whether this

be so or no, Hume's biographers have furnished us with satisfactory evidence that, both in the duties of the Embassy, and afterwards in the post of Under-Secretary of State, his philosophy did not prevent him from proving himself a thoroughly capable man of business.

But Hume's most brilliant Parisian success was won in other fields than that of business or diplomacy. He seems to have been welcomed with what can only be described as an outburst of enthusiasm by the gay society of the French capital. His writings and his philosophic fame procured him admission not merely to literary circles, but to the inmost penetralia of fashionable life. In this country philosophy and fashion own very different standards of merit, and in the English society of Hume's day they were almost reciprocally exclusive. Grub Street associations still clung to the literary life, and a fine gentleman like Horace Walpole was half-ashamed of being known to dabble in literature, and tried hard to sink the author when he wished to maintain the character of a man of fashion.

But in France, or rather in Paris, outside of which there was then no France, it was different. Rank might there second a man's claims to admission into good society, but it could not itself secure it. Aristocratic stolidity had there no chance. A coronet with nothing but arrogance and stupidity

beneath it was of no account, and dulness, even in the person of a duchess, was inexorably tabooed. Even polished manners and a good address, if the owner of them had no other recommendation, could not remove the social ban. To those brilliant *salons*, presided over by rival dames who had won their way to social supremacy, the one indispensable passport was wit, intelligence, cleverness, the possession or reputation of intellectual ability of some sort. In that bright, smiling, sparkling, refined quintessence of godless felicity, that whipped-cream of a world, in which courtiers, fine ladies, artists, wits, philosophers, men of letters, mingled and rustled and whispered and flashed their epigrams and bon-mots from ear to ear, a great intellectual celebrity was sure of a welcome. Nor, it must be added, would the welcome be less warm if his intellectual fame were spiced by a savour of infidelity. For never, as is well known, was there a society in Christendom from which the faintest tincture of religion was more completely banished, or which combined with the highest refinement of this world a more heathenish disregard of any world beyond it.

Such being the social atmosphere into which the Scotch philosopher was introduced, his popularity is not difficult to account for. Its artificiality, its idolatry of genius, its *blasé* worldliness, its contempt for all enthusiasms and superstitions, disposed it to

receive open-armed one who seemed to lend the sanction of philosophy to its ideal of life. Hume was, it is true, in some respects but ill-adapted for the part of an idol of fashionable society. His person was ungainly, and the eager, questioning, critical soul showed no sign of itself on the round, good-natured face. His French vocabulary, moreover, was limited, and the words did not come tripplingly from his Scotch tongne. A somewhat cynical fellow-countryman tells us how odd it was to see him at the opera seated between two sprightly young ladies, good-naturedly trying to respond to their attentions, like a huge pet dog to the caresses of its mistress. Nevertheless his genuine simplicity and good sense carried him safely through all this flutter of popularity; and though it was not in human nature not to be pleased and flattered by it, he took it for what it was worth, and heartily enjoyed without being hurt by a social success that would have turned many a wise man's head.

It was in a society of a very different type that the later and perhaps the happiest years of Hume's life were passed. Though as an author he tried hard to sink his nationality, and was nervously afraid of Scoticisms in style, and though there are sides of the Scottish nature and elements of the national life with which he had no sympathy, yet in some points of view he was a Scotsman to the back-bone. He

had left with reluctance that quiet retreat up countless pairs of stairs in the Lawnmarket, which was associated with his literary labours and successes, and it was there, surrounded by his books and his friends —the Robertsons and Fergussons and Adam Smiths and Elliots and Homes—and not in the brilliant society of Paris, still less in that of London, that his heart lay. And there was everything in the conditions of the cultivated society of Edinburgh in the middle of last century to make it a congenial environment for such a man as Hume. A century earlier, Edinburgh would have been no fitting, or even possible, home for a sceptical philosopher. A century later, and the characteristic features of Scotch literary life would have all but vanished under the absorbing influence of the wider nationality. Amidst the ecclesiastical ferments of the seventeenth century, Scotland would have been too hot to hold him. But in the reaction from its civil and theological turmoils, a cold fit had come over society, and the prevailing social tepidity was precisely the temperature with which Hume's intellectual and emotional nature was *en rapport.*

The fierce struggle with despotism which had hitherto absorbed the intellectual force of clergy and laity alike, was now at an end, and the intellectual horizon had begun to broaden. The national life lost its almost exclusively theological character, and

the clerical element ceased more and more to dominate society. Many causes contributed to this change. The passionate zeal which had lent dignity and elevation to a narrow creed and made even intolerance and arrant dogmatism seem respectable, no longer stimulated by the bracing air of persecution, began to die out. It became possible to separate the cause of political liberty from the cause of the Church. Other interests began to rival the ecclesiastical in the public mind. Literature and philosophy, long suppressed by the desiccating influences of social disorder, gradually revived; and a new order—that of men of science and letters—arose to modify the long-prevailing domination of the clergy, and to draw off to other objects that portion of the national intelligence which refused to linger amongst effete ecclesiastical squabbles and sectarian animosities. Of this order Hume was one of the most remarkable representatives, and its leading members, such as those above named and others, Robertson, Hutcheson, Fergusson, Adam Smith, Blair, Home, Henry, etc., were his intimate personal friends and almost daily associates.

It may seem inconsistent with what I have just said as to the waning influence of the ecclesiastical order that, with one exception, all the names I have mentioned are those of clergymen. And, at first sight, it is not a little strange that the leader of the new

order of men of letters, and he too one whose special proclivities were, to say the least, so little congenial to the theological mind, should have found his chosen friends and confidants in the ministers of the Church. But the explanation is easy. In the stirring times that had passed away, few or none who were not inspired by intense religious convictions were attracted to the clerical vocation. It had no charms for either the unenthusiastic or the worldly-minded—for quiet men whose piety had in it nothing of the spirit of the martyr or the zealot, still less for those who love an easy life of decent competence and respectable stagnation. But now, in a changed world, the Church had become a coveted home for other than pious enthusiasts or red-hot Covenanting zealots—for many men of fair and decorous lives, but over whom the chill that was in the air of the ecclesiastical world had silently crept. A race of ecclesiastics had arisen who were clergymen only in name, by inclination and temperament—the best of them, men of letters or aspirants to literary fame, the less noble of them, caring only for social position and worldly ease. Amongst the former there were many men of blameless lives and sincere though unemotional religious convictions, who performed their professional duties in a quite decorous manner, but in whom the clerical character was scarcely skin-deep. As we read, or try to read, such specimens of their pulpit perform-

ances as have survived the general doom of dulness—the frigid cento of prudential maxims, correct platitudes, colourless panegyrics of virtue and lukewarm exhortations to what was termed "rational and sober piety"—the materials of pulpit rhetoric which compose, *e.g.* the once well-known sermons of Dr. Hugh Blair—we can understand how evanescent was the limit that separated the teachers of this emasculated Christianity from the non-religious world; and how little, when they affected the society of men of letters, or even of sceptical philosophers, their presence would be felt as the intrusion of a foreign element.

The closing years of Hume's life were rich in all the constituents of happiness which he most prized. He had many friends and no enemies. His home was the resort of all that was most cultivated in Edinburgh society. His reputation as an original thinker had increased from year to year; and even those who were his keenest philosophical antagonists not only acknowledged his intellectual pre-eminence, but, however much they differed from the writer, could not help loving the man. Advancing years brought no diminution of his gaiety of spirit, nor did even the approach of death overshadow that cheerful serenity for which he had all his life been remarkable.

There are those who have thought it strange that the end should come thus to a man of

David Hume's opinions. A more dismal closing scene would have been in better keeping with such a career. But timidity or fortitude in the face of the inevitable is but a poor test of the truth of a man's beliefs. Christianity is not imperilled because the shadow of physical depression may eclipse in the failing intelligence the light of Christian faith and hope; nor, on the other hand, is the serenity of the sceptic, any more than the rapture of the saint, a sure criterion of what the one denies and the other affirms. Religion rests on a more impregnable basis than the moods and frames of those who receive or reject it. If it is to be tried by any outward test, that is surely to be found in the answer to the question, not how a man dies, but how he lives. It will be well for those who believe in Christianity to leave no advantage to the sceptic in that species of argument.

The narrative of Hume's life has extended so much beyond my intention that but little space is left for any notice of his philosophy. This, however, is the less to be regretted that the latter must necessarily form an important part of your philosophical studies under more competent guidance than mine. I can offer in the few closing sentences of this lecture only a brief indication of the general character and tendency of Hume's speculations. Hume's scepticism is the *reductio ad absurdum* of the sensational philo-

sophy; and it is so because, in the first place, he carries out that philosophy to its logical results, and frees it from the inconsistent ontological elements which by his predecessors of the same school had been mixed up with it; and because, in the second place, he has demonstrably failed in his attempt to account for our conscious experience on a sensational basis. A philosophy which reduces all thought to chaos is condemned by its own showing. It may be true that much or all of what we deem knowledge is unreal and illusory; but if it be so, philosophy is at least bound to account for the illusion. But the philosophical school of which Hume is the acutest and most thorough-going representative, whilst it undoubtedly proves that if our knowledge be of a purely sensational origin, the greater part of what we so designate is sheer fiction, when it further attempts to explain how it is that we mistake fiction, subjective illusions, for objective facts, only, as we shall see, betrays its own weakness. In other words, sensationalism, pure and simple, not merely fails to account for our knowledge, but it fails to account even for the spurious product which we mistake for knowledge. It professes to expose the trick by which we have long believed phantoms to be realities, but when this attempted exposure breaks down, all it really exposes is only the shallowness of its own pretensions.

There are no such things, said Locke, as innate ideas. The mind, at the outset, is a blank tablet, a sheet of white paper, and all our knowledge is simply what is impressed or written on this blank surface through the medium of the senses. But—since, according to this view, all we are conscious of is our own sensations, we have no right to speak of anything beyond them, and a man can no more get outside of his own consciousness than he can leap off his own shoulders,—to start thus with an outward world stamping impressions on the mind, is, as Berkeley and, after him, Hume saw, a purely gratuitous assumption. A thorough-going sensationalism knows no distinction of outward and inward, and must, in giving account of our knowledge, dismiss all other materials than those which sense supplies. The problem, therefore, which lay before Hume, was to account for the whole content of our consciousness by what he called "Impressions," and "Ideas," which are merely fainter copies of Impressions. Everything in our thoughts that cannot be traced back to some distinct sensitive impression, must be regarded as a mere illusion or irrational assumption.

Armed with this all-potent solvent, he finds a whole world of ideas, notions, beliefs, which, at its touch, dissolve away into unreality. Our supposed knowledge of an external world, *e.g.* whether in the mere rude common-sense conception of the popular

mind, or in the systematized conceptions of science, rests on the notion of causality, on the assumption, that is, of a necessary relation between cause and effect. But this assumption is a purely fictitious one. When we go back to the sole fountain-head of knowledge, we find nothing corresponding to it. All that sense gives us is, as Hume taught, simply one sensation or impression, and then another, and another—a series of isolated impressions with no intervening or connecting link between them. No doubt, in ordinary thought we do interpose such a link or bond of necessary connection between successive phenomena. But the sole reason for that is that custom or habit leads us in an inexplicable way to expect that phenomena which have often or always in our experience succeeded each other, will and must in future succeed each other. The only relation between successive events of which we know anything is that of time, but by a trick of imagination we come to suppose an actual nexus between them. All that we really perceive is, first the spark and then the explosion of the gunpowder; at one moment we see the flame, at the next we feel the heat; now the impact of one billiard ball and immediately afterwards the motion of the second. But when we instinctively interpose a link of necessity between any two of these phenomena and say that the one is the *cause* of the other, this is an assertion which Hume maintains, and

from his point of view rightly maintains, to be purely groundless. But if the notion of causality be thus annulled, it does not fall alone. Withdraw the link of necessity, and the whole fabric of our knowledge of an outward world crumbles away into arbitrariness and nonentity. Our belief in any permanent external object, our belief in the uniformity of nature, our belief in a First Cause, all of which are bound up with the notion of necessary causation, perish with it; and what is left instead of a stable and ordered universe, is only the individual sensitive consciousness and the series of unconnected sensations that flit arbitrarily athwart it.

But not even this remains to us. The inward world is as powerless as the outward to resist the disintegrating touch of sensationalism. "Bishop Berkeley," as in his smart way Sydney Smith puts it, "destroyed the outward world in one volume octavo, and nothing remained after his time but mind, which experienced a similar fate from Mr. Hume in 1739." And the way in which this catastrophe came about may be anticipated. The notion of a permanent self is obviously as groundless on sensational principles as the notion of a permanent outward world. If all our knowledge consists of sensitive impressions, to what impression can we point as that which gives us the notion of personal identity? To intercalate between the isolated moments of feeling

a something we call mind or self, is only to sanction vulgar instinct by the creation of a philosophical figment.

The old nominalists had maintained that general ideas are mere abstractions, and that the only real existences are individuals. There is no such thing as a general colour which is not black or red or green, or some particular colour. There is no such thing as a generic tree which is not an oak or elm or ash, or some other particular tree. Neither is there any such existence as man or humanity apart from the individual men who make up the race. The individuals are the only existing units, and the genus is only a name for the invention of the abstracting intellect. But Hume was too acute a logician not to see that the principle of nominalism, to be true to itself, must go much further. You have no more right to take the manifold experiences that constitute our conscious life from infancy to old age, and, omitting their differences, combine them under the abstract term "individual man" or "personal identity," and call that an actual existence, than you have, abstracting from the differences of an infinite number of living beings, to invent a term "animal" and say that that is a real existence. The only realities in our consciousness are particular sensations, or the series or collection of particular sensations; the general self or individual is a mere abstraction, a

fictitious creation of the mind. Thus sensational scepticism puts the final stroke to its work of negation or destruction. The external world is but one phantom conjured up by mind, which is itself but another phantom, and the only thing that with strange inconsistency seems to be left is the sensational philosopher himself looking with complacent cynicism at both.

Such then is the nihilistic conclusion to which this school of philosophy in its acutest exponent, by strictly logical development, led. But it is obvious that in the final inconsistency I have just noticed lies at once the proof of its suicidal character, and the starting-point of a higher and truer philosophy. A scepticism which evaporates all thought, evaporates at the same time the sceptical evaporator. If mind is an illusion, so of necessity are all the theories it forms of its own nature. You cannot destroy the conscious self for every other purpose and retain it for the one purpose of destroying itself. The sceptic sits on the branch of the tree he is sawing off, and when he has succeeded in severing it, topples down himself along with it.

And it is this that indicates the direction in which the refutation of sensationalism and the beginning of a new philosophy is to be found. In other directions, it is true, that refutation has been often attempted. The beliefs which Hume explained away, Reid and his followers tried to rehabilitate by the simple method

of re-asserting them and taking no denial. As Dr. Johnson thought he disproved Berkeleianism by kicking a stone and saying, "Thus I refute it," so the Scotch philosopher's way of answering Hume was by virtually the same appeal from philosophy to vulgar instinct. When a merciless logic has set reason at variance with popular uncritical beliefs, it is but a poor defence merely to dress up the latter under the big names of "original and necessary principles of consciousness," "primitive intuitions," "fundamental beliefs," etc. Simply to insist that there is an irresistible and universal belief in the independent existence of an eternal world, or that we have a primary belief in the existence of substances behind qualities, or that it is contrary to common-sense to deny the notion of necessary causation—this is not to answer the critical doubts of reason, but to try to silence them either by an appeal to numbers, or by a mere dogmatic reiteration in more solemn tones of the notions impugned. Mere belief, whether individual or general, is a purely subjective thing, and in order to be trusted, it must give a rational account of itself, it must prove its claims on objective grounds, it must justify itself before the judgment-seat of reason.

No doubt ordinary, uncritical beliefs may serve well enough as working hypotheses and for practical purposes. Philosophy and scientific criticism are not popular necessities. We can use and enjoy nature

with the rudest and most wrong-headed ideas of our relation to it; we can see and walk about by the light of the sun and stars with conceptions that belie the most elementary principles of astronomy.

> These earthly godfathers of heaven's lights,
> That give a name to every fixed star,
> Have no more profit of their shining nights
> Than those that walk, and wot not what they are.

But one thing is inevitable. If you begin with reason and criticism, you must go on with them. You cannot, when their first teachings disturb old notions, or seem to undermine cherished beliefs, hark back to what you call "common-sense," or shelter yourself from the smart of reason's arrows behind the old bulwark of authority, whether that of consciousness or any other. The wounds of reason can only be healed by reason. If the first draught of philosophy have confused and unsettled us, it is only by deeper draughts that we can overcome its intoxicating effects. "Drink deep or taste not the Pierian spring." And it was virtually this principle which, unfolding his own philosophical experience to mankind, a great speculative thinker announced to the world as the real cure of scepticism; and the world is only yet beginning to appreciate the full meaning and value of his lessons. "It was," says Kant, "the teaching of David Hume which first broke up my dogmatic slumbers, and gave a wholly new direction

to my enquiries in the field of speculation." What that direction was—how this great thinker surveyed the whole field of human experience, and instead of blindly asserting a deeper element in it than that on which the sensationalism was based, sought by a new and profounder method, to prove it, and so began the noble work which others have since carried on, of rearing again the crumbling edifice of human knowledge; how, if I may so express it, by their efforts, from the ruins of the former temple a new and more stately edifice gradually arose, and the second temple has been found to be more glorious than the first—the account of this splendid and, as I believe, imperishable enterprise, I must leave to other and more competent hands.

BISHOP BUTLER AND HIS THEOLOGY.

November 11, 1882.

In former addresses of this kind I have brought before you some examples of those who are recognized as masters in the various departments of knowledge. There is one of these departments, however, on which I have not yet ventured to touch. The studies of this place are very varied, and it is almost impossible to find a subject which, however interesting to some, would not be regarded with indifference or even aversion by others. But in an audience, a considerable part of which consists of those who are, either actually or prospectively, divinity students, there is an obvious call to treat of the science with which they are specially concerned, and of some typical specimen of the career to which they are destined. But the same reasons which have hitherto kept me from venturing on this ground, make it expedient that I should not select as my subject any one whose name is associated with the theological and ecclesias-

tical strifes and divisions of our own or very recent times. Casting about for a name that fulfils this condition, and is yet not so remote as to lose interest in some respects for the modern theological student, I have resolved to call your attention to the career and work of a great English theologian of the last century, whose writings are still an authority in their own province—I mean, BISHOP BUTLER.

If it must be acknowledged that the influence of Butler and the school to which he belonged has all but passed away, yet his works at least afford a landmark by which we may measure the distance, whether in advance or retrogression, that separates the theological mind of the eighteenth century from that of our own day.

The biographies of Butler are singularly meagre in personal details. Indeed there are few modern writers of equal eminence of whose outward life we know so little. Partly this arises from the character of the man, partly from that of his time. There are some men whose avocations imply a certain measure of publicity, and who, despite of native reserve, cannot help being much in the eye of the world. There are other men who like to take the world into their confidence, credit the public with an interest in the most minute details of their private life, and to whom publicity and popularity is the very breath of their nostrils. Butler belonged to neither of these

classes. However little we know of his personality, we know this much, that he was a man of singular simplicity and self-forgetfulness, absorbed in the work to which his life was devoted, and thinking so little about himself that it never seems to have occurred to him that the world would be of a different opinion.

In Butler's time, moreover, society had not yet developed the nineteenth century taste for personal gossip, nor did it possess the organized means of gratifying that taste, which is the privilege of our time. Had he lived now, no fence of native reserve could have protected him from public curiosity or from those who earn a somewhat ignoble living by pandering to it. A remarkable man in our day, in whatever line of attainment, is the sure prey of interviewers and newspaper correspondents. From the moment he does or writes anything noteworthy his privacy is gone. The incidents of his outward life on which he himself never wasted a thought, his appearance, dress, domestic relations, his hours of getting up and going to bed, his private opinion as to the character of his neighbours and friends, what he thinks on all sorts of questions, grave or insignificant—all this is deemed common property, and his refusal to acknowledge the claim is regarded almost as an insult to an intelligent and admiring public. Happily for Butler he lived at a time when it was possible for the solitary student to pass his days

unmolested by the parasites of literature, and when the privacy so congenial to his modest, unobtrusive nature was not as yet the prerogative only of dulness and mediocrity.

It is true, indeed, that a better motive than vulgar curiosity may awaken our interest in the events of a great writer's life. There are writers whose life and thought are so closely interwoven that each reflects light on the other, and neither can well be understood apart. But, on the other hand, there are many books and classes of books, the understanding of which is not the least helped by acquaintance with the author's personality. In science and philosophy the value of a man's contributions to knowledge is not determined by anything we know of himself. Newton's *Principia* would neither lose nor gain for the scientific intelligence if it had been an anonymous production. Kant's *Critique* or Hegel's *Encyclopädie* would be a neither more nor less important contribution to speculative science had it dropped from the clouds. In theology, indeed, experience would seem to show that there is more room for the betrayal of the subjectivity of the writer than in other sciences. But though religion is the domain of feeling, it may be maintained that the more nearly theological investigations approximate to a purely scientific character, so much the more do, not merely the peculiarities of the sect or school, but

individual feelings and tendencies cease to colour the investigator's views and opinions, so much the more does his mind become the pure mirror of objective truth.

In what measure Butler's writings partake of this purely scientific character, we shall immediately see; but there can be no doubt that, whether from this or other causes, they are singularly devoid of personal colouring. His main work, the *Analogy*, might, for all that appears of the individuality of the writer, have been composed by an intellectual machine. Facts, inductions, principles, inferences, exceptions, guarded and limited conclusions, succeed each other with an air of self-acting ratiocination, undeflected from its operation by any arbitrariness of personal tendency. If a subdued glow of feeling may, on closer inspection, be discerned pervading the whole work, it is a kind of feeling almost as impersonal, so to speak, as the universality of reason itself—the love of truth and the desire of its prevalence. In short, whilst the meagreness of external information as to the personality of a writer is sometimes supplemented by the self-revelations to be found in his works, from the pages of this grave, calm, self-effacing writer we derive absolutely no such help to our conception of his individuality and of his outward career. Let me narrate to you the few incidents of Butler's life that have come down to us, and then

briefly consider what contributions he has made to ethical and theological thought.

The tendency of an aristocracy to become a caste is, in English society, greatly modified by the relations of the aristocracy to the legal and ecclesiastical professions. The foremost places of social rank may be, and have often been, held by men who have sprung from the people, and, by the natural selection of mental power, have forced their way into the privileged order. The future ecclesiastical dignitary whose life I am to narrate was of humble birth. He was the son of a retired linen-draper, and was born in the year 1692 at Wantage, a small country town in Berkshire. His father was a Presbyterian, and the son, whether from his own choice or his father's wishes, was destined to the ministry of that communion. He was placed, with that view, in a dissenting academy taught by a Mr. Samuel Jones, of whose professional ability some indication may be gathered from the eminence attained by not a few of his pupils. Amongst Butler's school companions, one at least of whom was his life-long friend, have been named Secker, who became primate of the English Church; Maddox, afterwards Bishop of Rochester, and Samuel Chandler and Nathaniel Lardner, well known for their subsequent eminence as nonconformist divines.

Of his studies in this seminary nothing is known

except what can be gathered from a single incident of which, in the paucity of information about him, much has been made by his biographers. Dr. Samuel Clarke had recently published a book which, though long ago consigned to the theological lumber room, attracted some attention in its day—his so-called *Demonstration of the Being and Attributes of God*; and the young student fledged his theological wing by writing some critical notes on this book, and getting them conveyed to the author. All that can now be said of these strictures is that they were at least as good as the matter criticised. They suggested ingenious objections to meaningless arguments. An air of metaphysical subtlety and a pretence of demonstrative reasoning cannot disguise the essentially fictitious character of Clarke's whole production. Any traces of philosophical insight to be found in it are merely reflexions from the writings of Descartes, Spinoza, and Leibnitz. Of its value as a serious contribution to speculative theism we may judge from one remarkable proof of the divine existence on which great stress is laid. "Space and time," says Clarke, "are necessary existences because the *sine qua non* of all other existences. But space and time are evidently not substances, but only properties or modes. Of these necessary properties there must therefore be a necessary substratum or substance, *i.e.* there must be a God." Well might Butler answer that "to say

that the self-existent substance is the substratum of space is scarcely intelligible, or at least not self-evident." In truth, the whole argument is a piece of meaningless jargon, a nest of unsifted metaphysical assumptions, from which it seems incredible that any sane being should derive the slightest satisfaction.

The next remarkable incident in Butler's life, and one which determined his whole future career, was his abandonment of dissent for the established church. Of the reasons which led to this important step we know nothing. All we do know is that it was taken, not without parental and other remonstrance. At his father's instance, certain neighbouring Presbyterian ministers were summoned to confer with the unsettled youth; but, as we may easily suppose, on a question of ecclesiastical polity, or indeed on any question, Butler was more than a match for any number of country ministers: and the result was that, with his father's reluctant acquiescence, he had his own way, and was in March, 1714, entered at Oriel College, Oxford. From what we know of Butler's character, it is impossible to doubt that this step was due to conscientious conviction; but in a man of less transparent simplicity of nature it would certainly have been open to suspicion. Conversions which coincide with worldly interest and ambition may doubtless be sincere, but their sincerity is not self-evident to outsiders; nor, in general, so far as experience proves,

does the one Church lose much by the desertion, or the other gain much by the accession, of such converts. In Butler's case the loss or gain was for once a most notable one—nothing less than that of a mind which would have conferred lustre on the obscurest sect, as it ere long eclipsed all the lesser intellectual lights of the larger and more powerful communion to which he turned.

Passing by Butler's Oxford career, of which we know nothing save that he formed with Edward Talbot, son of the Bishop of Durham, a most intimate friendship to which he was in some measure indebted for his subsequent preferment in the Church, we find him, shortly after taking orders, appointed in 1718, at the age of twenty-six, "preacher at the Rolls." In this office he laid the foundation of his future fame by delivering his now famous *Sermons on Human Nature.* The sermons, which are only fifteen in number, are merely a selection—he himself says, an accidental selection—from those which he delivered in the course of the eight years during which he held this appointment. A story is told by a recent writer, on what authority he does not say, that long after Butler's death "some one discovered the widow of a country rector in the act of destroying, for culinary purposes, the last remains of a box of sermons"; that on examination they were found to be by no less an author than Bishop Butler, and that

all the culprit could say in self-defence was that she thought the sermons were those of her late husband. Whatever indication this incident gives of conjugal respect on the part of the lady, perhaps, in ordinary cases, such a catastrophe would involve no very serious loss to the world. In this case the loss would have been an exceptive one; but as Butler's papers were destroyed in accordance with directions in his will, there is probably no truth in the story.

Of the ethical theory, which is the essential element of these sermons, I shall not here speak; but looking at them simply as specimens of pulpit literature, they stand out in marked contrast from the contemporary style of sermonizing, and in some measure serve to account for the rapid professional success of their author. The dulness of the pulpit is, in our day, a stock theme for small critics. It is not for me to say whether the current criticism is just—whether the average sermon is not as respectable and interesting a production as the average specimen of any other kind of speech or writing produced under similar conditions. But most certainly, judging from what has come down to us, of all the trials of human patience, listening to sermons in the eighteenth century must have been one of the severest. A speaker may be interesting when he appeals either to intelligence or feeling. It is not given to all men to be original thinkers, but, without saying

anything new, a preacher may awake attention either by reproducing accepted opinions in new aspects and applications, or by touching the springs of moral and spiritual emotion, or, failing all other claims on our interest, by being himself in dead earnest about the subject of his talk.

But the pattern sermon of the Georgian era seems to have been constructed almost expressly to steer clear of all possible ways of getting human beings to listen to it. The preacher might in most cases have quoted in a literal sense the inspired declaration, "I have fed you with milk and not with strong meat." The spiritual ideas of the Gospel were watered down to a kind of washy optimism. Moral truisms backed up by reference to a sort of good-natured potentate designated "the all-wise and beneficent Author of the universe," ethical precepts enforced by platitudes about the happiness of a virtuous life, the baneful influence of vice on a man's prospects in this world, and the wisdom of having regard to "a future state of rewards and punishments,"—such were the stock materials of the eighteenth century sermon. No idea more profound than the most incontrovertible common-places, no morality more elevated than that of copy-book headings, were ever advanced in it; all appeals to feeling were excluded as offences against the received canons of moderation and good sense, and the only occasion

on which the preacher ever betrayed emotion was when denouncing what was called "enthusiasm" as inconsistent with sober piety.

Now Butler's sermons, though in some measure reflecting the characteristic tendencies of the time are marked by qualities which, to an educated audience accustomed to the conventional style of preaching, must have been a new experience. In the absence of the dogmatic and sacerdotal element, in the emphasizing of practical morality, and the tendency to regard religion mainly as the supernatural sanction of ethical duties, and in the unimpassioned and unrhetorical tone which pervades these sermons, they are moulded by the spirit of the time. But they are full of ideas which, whatever their speculative value, are the result of independent thinking, and to minds accustomed to the vapid common-place of the typical sermon of the day, must have seemed full of originality and power. In some of them, as, for instance, the sermons on "Self-deceit" and on the "Character of Balaam," there is an insight into human nature, a calm yet merciless dissection of motives, and exposure of the disguises to which selfishness and baseness betake themselves, that have all, and more than all, the effect of the bitterest invective. Addressed to an audience composed of the courtiers, lawyers, politicians, men and women of fashion of that age of social laxity, skinned over by a thin surface of Chesterfield politeness, we

can well conceive how these discourses produced an effect and awakened an interest, all the more vivid by contrast with the normal dulness of the pulpit of the day.

The subsequent incidents of Butler's career I can only briefly summarize. He attracted the notice of Queen Caroline, one of the most sagacious and clear-headed women of her time. Besides managing her well-meaning but somewhat stupid and very gross-living husband, George II., and exercising through him a vigorous and wholesome influence on public affairs, the Queen found time for society, and, by preference, for a kind of society in which great ladies do not often take delight. It was her custom to take refuge from the cares of state and the company of court officials, male and female, in that of a select group of philosophers and divines, and to set them talking and discussing on moot points in metaphysics and theology. Of these symposia no record has been preserved. All we know of them is that Clarke, Hoadley, Sherlock, Secker, Berkeley—most of them latitudinarian, or, as we should say, Broad-Church divines—took part in them, and that in the discussions, whether from her own ability or the self-restraint of courtly ecclesiastics towards a royal polemic, the Queen was said to be able to hold her own. To this strange privy council Butler, whose merits so sagacious a judge of character as Queen Caroline was sure to

recognize, was admitted; and thenceforth court favour and professional preferment flowed in upon him. He was appointed "Clerk of the Closet"; he was preferred to the rectory of Stanhope, the richest living in the Church of England; he was appointed successively Dean of St. Paul's, Chaplain to the Lord Chancellor Talbot, Bishop of Bristol, and finally, towards the close of his life, Bishop of Durham, and there is some ground to believe that he refused the Primacy.

It is no doubt greatly to the credit of the dispensers of patronage in those days that a man of Butler's merit should have risen so rapidly and so high. Even in churches whose constitution is of a more popular kind, success, to say the least, does not always go by merit. What are called "popular gifts" are sometimes only the disguise of shallowness, and of the selection of ministers to vacant charges it may perhaps, in a slightly different form from the original sense of the text, be said that "not many wise men are called." Of course arbitrary selection to posts of honour is even more possible in churches moulded on a less popular type. We need not accept as absolutely true Mr. Goldwin Smith's definition of a bishop; but sarcasm would be pointless if it were not at least founded on fact. "I trust," says he in his incisive way, in answer to a writer whose adulation of a departed prelate he deemed excessive, "I trust

I am not wanting in respect for those who, by their eminent virtues, the cautious character of their theological opinions, and the coincidence of their political principles with those of the First Minister of the Crown, have been raised to the highest preferment in the Established Church. But to me an Episcopal philosopher is a philosopher and nothing more; to me a dead bishop is only a dead man."

None of the qualifications for the mitre here adduced could be ascribed to Butler. Neither in theology nor in politics could he be called a trimmer or a time-server; and it would have been impossible to speak ironically of the "eminent virtues" of a man so simple, so blameless, so unselfish. Whatever be the true account of the matter, there can be no doubt that Butler's promotion, as it came to him unsought, left him to the last as simple-minded, unworldly, unstained by the vices of great place and power, as it found him. His personal habits were as unluxurious as those of a monk. From the large revenues of his see he accumulated no fortune; his vast patronage he used with such unwonted superiority to nepotism that a disappointed relative declared it to be a misfortune for a candidate for preferment to be connected with the bishop. Books, retirement, leisure for quiet study and thought—these were the treasures he valued most. And though he discharged his episcopal duties with a fidelity remarkable according to the standard of the

time, he probably felt the cares of office and the external exigencies inseparable from it to be rather a distraction from the work for which, by temperament and taste, he was best fitted. "He belonged," it has been said, "to the small class of men who find in abstract speculation not merely the main employment, but almost the sole enjoyment of their lives." And though in him there was nothing of the helplessness and almost imbecility in practical affairs which it sometimes amuses the world to witness in such men, it is obvious that his bent was to a life of contemplation rather than of action. He was anything but an impractical dreamer; an ethical and practical aim dominated all his studies; but it was man and not men, humanity in its universal powers, wants, hopes, fears, aspirations, limitations, rather than individual human beings with their accidental and infinitely varied characteristics, in which he felt most interest. It is not difficult to understand how one of such temperament and tendencies should pass through life without either attracting warm personal attachments or provoking personal hostility.

It was impossible indeed that so remarkable a man should altogether escape criticism, and there are always people to whom the reserve of an elevated nature is a kind of tacit offence, and whose suspicions are awakened by the very simplicity which should disarm them. But the worst that such critics ever

ventured to insinuate of Butler was a ridiculous charge of leanings to the Catholic Church. He was known to have read the *Lives of the Saints*, he had a taste for stained glass, he had adorned the wall of his private chapel with a marble cross. And so, on no better ground than such wretched gossip, the sort of people with whom in our own day we are not unfamiliar—who have a morbid scent for heresy, and hunt out the faintest traces of what they call "popish errors" with the zeal of a detective—proclaimed to the world their belief that Butler lived and died a papist. Butler, we may be sure, if anything of the kind ever reached his ears, never condescended to answer such vulgar slander, and those who honour his memory will imitate his own magnanimous silence.

Butler's title to fame as a writer rests on his contributions to ethical science and on his *Analogy*. Space compels me to omit what I intended to say on his ethical theory, and to confine my remarks to his greater work.

Butler's *Analogy* affords an example of the survival of a book in an age that has long passed away from the standpoint on which it is based. The evidential literature of the eighteenth century, with its hard and fast distinction between natural and revealed religion, its anthropomorphic ruler of the world proved by the argument from design, its appeal to reason to demonstrate the authority, whilst denying

its right to deal with the contents of Scripture, its general tendency to regard religious belief as the result of a process of argument—has, for the most part, ceased in our day to have any other than a historic interest. The conflict between the assailants and defenders of the faith is still as hotly waged as in the days of the Deistical controversy, but it has shifted to new ground and it is fought with different weapons. Agnostics, materialists, evolutionists, pessimists, historical and critical rationalists—he who undertakes to meet these and the like opponents would in vain arm himself with the old weapons that drove Tindal and Collins and Chubb and their coadjutors routed from the field.

But if much of a once famous apologetic literature is now forgotten—if Leslie and Chandler, Sherlock and Warburton are unread, if even the writers of a time nearer our own have shared their fate, if the laborious research of Lardner, the clearness and argumentative skill of Paley have not saved them, or only partially saved them, from the neglect that falls on the champions of extinct controversies—how can we account for the fact that Butler, who is in many respects identified with the ideas and the spirit of his time, should retain a place of honour in the religious literature of our own day. It is not a sufficient explanation of this survival that Butler had the good fortune to be selected as

a standard theological authority by the English Universities, and that the artificial sanctity in which he has been embalmed in these great seats of learning has, in his case, counteracted the law of natural selection. There is a limit to the antiseptic powers even of the greatest academic authorities; they may sometimes prolong a moribund reputation, but where there is no inherent vitality they cannot arrest the process of dissolution. Perhaps the true answer to the question will be found in the fact that, whilst Butler is, in one point of view, a thorough representative of the religious attitude of his time, and whilst the argument of his great work is, in some respects, fallacious and untenable, there is nevertheless, in the spirit of his teaching, much that was in advance of his time and that is of essential and permanent value.

I. An examination of Butler's great work would lead us into theological discussions beyond the scope of a lecture such as this. All I can here attempt is to indicate the general point of view which is common to Butler with the other evidential writers of his time. But before doing so, I may offer one or two brief remarks on the argument of the *Analogy*, and its success in dealing with the religious difficulties it attempts to meet.

The more important part of the book is an elaborate attempt to silence the objections of a theist to

revealed religion, by showing him that revelation does not contain more or greater difficulties than he must have already got over in order to retain his belief in a God. For everything in Christianity that seems unintelligible, contradictory, or unworthy of a divine author, something precisely analogous could be pointed out in "the constitution and course of nature," which, nevertheless, the theist believes to be of divine origin. There is nothing, in other words, in the system of Christian doctrine which does greater violence to reason and conscience than the facts of nature (meaning by the word, not physical nature, but the natural course of events in human life). "Let any one," says a modern expounder of Butler, summarizing his argument, "let any one who objects to Christianity that its leading doctrines are opposed to our moral instincts, test his principle by carrying it with him to a like scrutiny into the constitution and course of nature. He must acknowledge that, thus judged, the moral order of the world appears defective and inexplicable. Is he offended at the arbitrary distinction made in the scheme of salvation between the elect and the reprobate? But in nature is not one man born to honour and another to dishonour? Is it from any regard to the merits of individuals that one man comes into the world inheriting wealth and friends, bodily health and mental dispositions towards virtue, while another creeps into existence diseased

and prone to vice? Is it shocking to justice that the innocent should suffer for the sins of the guilty? But this is the ordinary, everyday course of things. The punishment of sin does not always fall on the head of the sinner himself. It is not only that his innocent family and connections must suffer with him, but sometimes he appears not to suffer at all, or not in proportion to his guilt,"—and a great deal more to the same effect.

Now on this argument it may be remarked that, whatever consolation it might bring to those who adopt its presuppositions, there are not many persons who are in the state of mind to which it is addressed. They must be persons who, besides other assumptions, accept the author's account both of the contents of Scripture and of "the course and constitution of nature." The doctrines at which reason is supposed to stumble, and which, it is taken for granted, are those of the Christian religion, are simply the system of doctrines regarded as orthodox by the divines of Butler's day. But to any one who holds, for instance, that the doctrine of arbitrary election and reprobation, according to which God is represented as allotting eternal bliss to some and eternal misery to others for no reason save that it is His sovereign will and pleasure to do so, that is, for no reason at all, to any one,—and there are, I hope, multitudes in that case,—who holds that this monstrous dogma is not really

taught in Scripture, the difficulty which this elaborate argument attempts to meet, ceases to exist. Nature need not be ransacked for something parallel to it. The spectre he would lay is one of the author's own conjuring.

And the same thing may be said of most of the other doctrines which are supposed to offend our moral instincts, such as the punishment of the innocent for the guilty, or, in general, the transference of moral merit and demerit. If the Bible contained such a doctrine as that the moral demerit of a bad man or merit of a good one can be simply transferred to another by a divine act, this would not merely be a difficulty for reason, to be got over by finding something parallel to it elsewhere. Indeed, the only relevant kind of parallel would be a constitution and course of nature in which it was found possible to transfer to a triangle the properties of a square, or to impute to the former the merit of having four angles and four sides. Here again, for those who do not find any such doctrine in Scripture, who believe that it has only been read into Scripture by a false dogmatism, the difficulty in question, the seeming stone of stumbling and rock of offence for reason, evaporates into space.

On the other hand, if there are comparatively few who now find Butler's difficulties in revealed religion, there are equally few who would discover his con-

solatory facts in nature. No doubt the course of nature, that is, of human life, regarded from an individualistic point of view, contains much that is inexplicable and unjust. Whether the implication of the individual members of human society with each other for good or evil is a problem which may not find its solution in some such idea as the organic unity of the race, is not the question here. But that the course of nature contains anything parallel to the *punishment* of one man or of many innocent men for the sins of another, is a premiss of Butler's argument which few would concede. The innocent child of the profligate, it is true, suffers terribly for the father's misdeeds; but who will say that in this and other such cases there is any transference of guilt, or that, in the proper sense of the word, the suffering of the child can be called *punishment*?

Is there, again, anything in nature parallel to the arbitrary election of men to eternal bliss or woe? Suppose it were admitted that men enjoy and suffer much in this brief life for which the principle of exact distributive justice cannot account, and that, so far, the good and evil of life is arbitrarily allotted, is this an exact parallel to their being called into existence by an omnipotent will, only to be, irrespective of all reason but that will, blessed or damned to all eternity? Surely these

necessary postulates of the argument from analogy take a little too much for granted In fact, if its representations of nature and of revelation were anything else than a hideous fancy-picture, the true result would be, not consolation for doubting souls, not a redintegrated faith in religion, but a horrible sense of chaos and confusion, or a belief that both nature and revelation have their origin, not in infinite wisdom and goodness, but in the caprice of some mocking Moloch making grim sport of his own creation.

The only other observation I shall make on the argument of the *Analogy* is, that even if the parallelism of difficulties were much more exact than we have seen it to be, it would surely be but a poor defence of a supernatural revelation that, instead of throwing light on our moral difficulties, it only exactly reproduces them. The perplexed traveller would not be encouraged to place his faith in a guide book, by the information that as to the right route it contained parallel difficulties to his own. Yet here the theist, perplexed by the mystery of life, struggling hard to keep his faith in God despite of manifold seeming anomalies and contradictions, and longing for new light from heaven, is expected to believe in or at least not to reject a professed supernatural revelation, on the ground, not that it removes these anomalies and contradictions, but that it adds to them others precisely of the same sort.

II. The theological literature of the age to which Butler's *Analogy* belongs was mainly employed in "proving the truth of Christianity" without touching its content and substance. The divines of that day did not trouble themselves much about dogma, or exegesis, or experimental religion. The only concern they seemed to have with the doctrines of Christianity was to force men by logical arguments to accept them in the lump as of divine authority. The whole enquiry into their truth was to be conducted very much like a question of legal evidence, and the truth or falsehood of religion was to be determined in the same way as the innocence or guilt of a prisoner at the bar of a court of justice. There is scarcely any caricature of the attitude of the evidence-mongers towards religion in Johnson's saying, that "the Apostles were being tried once a week for the capital crime of forgery."

The presupposition with which this method of enquiry started was that religion belonged to the domain not of demonstrative but of probable truth, and that it must stand or fall with the preponderance of evidence for or against it. The whole matter is surrounded with difficulties. Much can be said on both sides. You cannot expect absolute certainty. There is a great number of arguments against both natural and revealed religion, but there is a greater number in its favour. Every man is bound to weigh

the arguments on both sides, and strike the balance between them. And the point which the defenders of the faith had to make good was, that if you went into this question in a candid spirit, you would find that the arguments against religion kicked the beam; or, to put it differently, that after a careful examination and cross-examination of the witnesses, an honest jury would be sure to bring in a verdict for the defender.

Butler was too honest a man to overstate the value of this kind of proof. The truculent dogmatism of such a combatant as Warburton, who claimed all but demonstrative certainty for his conclusions, could account for hesitation to accept them only by the moral depravity of the doubter, and tried to get the verdict he wanted by brow-beating the witnesses and threatening the jury. This style of judicial fairness was abhorrent to Butler's candid and truth-loving nature. "Probable evidence," he says, "in its very nature, affords but an imperfect kind of information." "It is most readily acknowledged that the foregoing treatise is by no means satisfactory," he writes at the close of the *Analogy*; "very far indeed from it: but so would any natural institution of life appear, if reduced into a system, together with its evidence."

But to this admission Butler adds the curious argument, which has been frequently repeated by the school to which he belongs, that in a matter of such moment as religion, probable evidence ought to have

the practical effect of demonstration. "Probability," says he, "is to us the very guide of life." "In matters of speculation and in matters of practice," we are often under an obligation to act upon probability, "though it be so low as to leave the mind in very great doubt what is the truth." "From the natural constitution and course of things we must, in our temporal concerns, almost continually, and in matters of great consequence, act upon evidence of a like kind and degree to the evidence of religion"; and "if the interest which religion proposes to us be infinitely greater than our whole temporal interest, there must be proportionally greater reason for our believing and acting on such evidence." "When so much is at stake, even a serious apprehension that Christianity may be true lays persons . . . under the obligation of a regard to it, not the same exactly, but in many respects nearly the same, with what a full conviction of its truth would lay them under."

To the same effect a modern follower of Butler writes: "Faith in the same sort of evidence which the sceptic rejects when urged in behalf of religion, prompts the farmer to cast in his seed, though he can command no blink of sunshine nor a drop of rain; the merchant to commit his treasures to the deep, though they all may go to the bottom; the physician to essay the cure, though often half in doubt whether the remedy will kill or save. God

says to us in effect, 'On such evidence you must and shall act,' and shows us that we safely may."

The drift of this is, we do and must often in daily life make up our minds to act on probable evidence; why should we hesitate to accept the same sort of evidence as a sufficient ground for action in religion? Consequences so awful are involved in our accepting or denying the truth of religion, that, in this case, we ought to let a very slight preponderance of evidence have on our minds the effect of demonstration. Suppose there are three chances to one for the truth of religion, you ought to act as if it were absolutely certain, rather than run the risk of losing your soul by doubting or denying it.

Now it is no irreverence to a great name to say that the thought of our day has got beyond the whole attitude of mind to which this kind of argument is addressed. What we now see at a glance is, that it is really an impossible or self-contradictory attitude, and that even if it were possible, the idea of religion which it involves is superficial and degrading. In the first place, we are told that in religion we ought to act on probable evidence, as we often do in our temporal concerns. But the answer is obvious; in religion belief is action, and to believe with a mind half-convinced is a contradiction in terms. Religion does not consist in doing, like the farmer or doctor, certain outward acts, which, for the sake of possible

ulterior benefits, we might run the chance of doing, though still far from certain as to the result. But to be religious is to believe, to grasp by faith spiritual realities; to have, not a hesitating expectation, but a profound conviction of the truth of the things unseen and eternal. Now this is a kind of action which obviously cannot be done on evidence that leaves room for doubt. To believe for certain on probable evidence is to believe more than the grounds of belief warrant. Suppose that out of twenty possible reasons fifteen are for religion and five against it, how can you force your mind to let the fifteen have the effect of twenty. The legitimate result is not certainty, but an approximation to it in the ratio of three to one.

Moreover, to let probability have the force of certainty is not only an irrational but an immoral act. Doubt is a duty where evidence is imperfect, and to make-believe that we have certainty where we have only probability, is as immoral as to take credit in money matters for capital we do not possess. Instead of saving our souls by such faith we are already losing them by intellectual and moral dishonesty. The alleged parallels from our present life are not truly analogous. The farmer, the merchant, the physician, act; they do not believe. They do not even act as if they believed in a certain result; they merely take their chance that it may come about. The farmer does not believe for certain, nor even act

as if he believed, that the seed will produce a crop. His acquaintance with well-known laws of nature assures him that, if he fulfil certain conditions, there is a strong probability that his end will be gained; but he also knows that unforeseen contingencies may frustrate all his hopes. But where is there anything parallel to this in religion? Or, if in the spiritual life anything like this were possible, would it deserve the name of religion? Is a man a believer in God who resolves to act as if there were a God, thinking at the same time that it may possibly turn out that no such being exists. Is a man a Christian when he simply determines to run his chance of Christianity proving true, with a reservation in his mind that the whole thing may prove a delusion? The prudential motive that is to turn the scale, so far from rendering religion more obligatory, really vitiates the so-called religious act. In a matter of such consequence you should act, it is said, as if religion were true; *i.e.* act as if you believed, because it is safer to do so; religion will do you no harm if it should turn out to be false, and if it be true you will be on the safe side; you will be no loser by believing, and if you do not believe, you may possibly be damned. It is no caricature of this style of teaching when it is represented as exhorting us "to believe in a God, lest if there should happen to be a God he may send us to hell for doubting the fact of his existence."

These observations lead us, I think, to the conclusion that the mental attitude of the evidential school is a false one. Genuine religious conviction can never be the result of a balancing of logical arguments; it cannot be a belief produced by a series of external proofs, and which implies no relation of the spirit of man to the thing believed. The proof of religion cannot be separated from its essence. You can no more argue a man into a belief in religion than into a belief in art or morality. He who believes in these things, believes in them on grounds to which an unlimited supply of supernatural or other credentials is wholly irrelevant. A man whose soul is vibrating to the beauty of nature would not have his faith strengthened by any amount of miracles and prophecy to prove that nature is beautiful. Belief in the reality of righteousness, purity, love, goodness, could neither be produced nor fortified by signs and wonders the most portentous, wrought before your eyes, much less by elaborate arguments to show that the preponderance of proof is in favour of such signs and wonders having been wrought about two thousand years ago.

Nor, on the other hand, if you do really believe in such things as righteousness and goodness, can they for you belong to what these reasoners call 'probable,' as distinguished from 'demonstrative,' truth. Honour, veracity, justice, fortitude, purity, charity,—

if you believe in these at all, you believe in their reality and nobleness, and, on the other hand, in the baseness of treachery, cowardice, injustice, sensuality, selfishness, with an absolute certitude which admits of no shadow of doubt, which no conceivable external proof could shake, which would remain unshaken though the heavens should fall. And if Christianity is not the revelation merely of an almighty anthropomorphic governor of the world, but of that infinite righteousness, goodness, love, which found its highest human expression in the life of Christ; then to believe in Christianity is not to believe in a highly probable God, for whose existence there are many strong arguments balanced by some grave objections; but it is to believe in that which is surer to us than life, on which all life, all thought and being rests, and our faith in which neither life nor death, nor things present nor things to come can subvert or shake.

THE STUDY OF HISTORY.

November 8, 1884.

BEFORE proceeding to the business for which we are met, I think it right to advert in a single sentence to the loss which this University has sustained by the sudden death of the Lord Rector.

This is not the time or the place for any attempt to delineate the character or retrace the career of Mr. Fawcett. I will only venture to say now that in him there seems to have been a beautiful combination of qualities seldom united in the same person. He seems to have been not more remarkable for intellectual vigour than for moral force of nature. Fortitude, indomitable strength and self-reliance, an almost stern devotion to duty, were found in him not incompatible with a genial benignity and affability and an utterly unselfish simplicity of nature that drew to him the love and trust of many friends. The contemplative and the active life are often contrasted. Not many are capable of achieving excellence

in both, and men are drawn by individual genius and temperament, some to the former, some to the latter. But our late Lord Rector seems to have possessed the capacities that fitted him for a career in which both elements were brought into play. He found himself at home alike amidst the active avocations of the statesman and administrator, and in the quiet and studious life of a University teacher.

Nor did the diversity and seeming incongruity of his spheres of labour result only in that mediocrity which is often the consequence of scattered energies. Universal recognition places him, if not in the front rank of political eminence, at least not far behind the foremost, and as a thinker he was in one branch of science a man of distinct originality, and one whose writings have helped in no slight measure to mould the thought of his time. It is sad to think that a career so fair, so honourable, so full of usefulness to mankind, should have been suddenly arrested. It was only the other day that I expressed to you the hope that we should soon have the happiness of seeing him amongst us and listening to the voice that is now and for ever silent. I know that he felt no common pride in being selected by your suffrages to fill the place of your Academic chief, and I am sure that you will unite with me in the expression of our unfeigned regret that he has passed away in the midst of his years and his usefulness, of our

sense of the loss which the nation has sustained by his removal, and of our sympathy with those who were related to him by the sacred ties of love and home.

Amongst the many projected improvements in our University system one of the most important is the foundation, if not of a school, at least of a Chair of History. The professor of Ecclesiastical History is indeed by his commission also professor of Civil History; but even if his Chair did not properly belong to the Divinity Faculty, either of the two provinces of history is more than enough for the work of one man. "We regard it," say the Universities' Commissioners of 1858, "as most undesirable that this defect in the University system should be allowed to continue," and "we think it of great importance for the students in the Faculties of Arts and Law that this (Glasgow) University should be provided with a professor of History who should be a member of each of these Faculties." In selecting a topic for the present lecture I have thought that, partly because it might serve to draw attention once more to this admitted defect, partly because of the interest of the subject in itself, I could do nothing better than offer you a few remarks on the nature and uses of the study of History.

The expediency of introducing the study of history into a University curriculum turns upon the question

whether history is capable of scientific treatment. Knowledge which has not yet been elevated out of the domain of facts and details, which has not submitted itself to the grasp of principles, or become in some measure illuminated and harmonized by the presence of law, cannot, I suppose, be regarded as a fit instrument of the higher education. History, as well-known examples show, may be made interesting without pretending to be scientific. The story of past times and events may be told in a picturesque, lively, and graphic manner; by judicious selection and elimination it may be made to consist mainly of stirring and exciting narration, clever and life-like portraiture of character, vivid and brilliant descriptions of scenes and places and personages; the lights and shadows may be so arranged, the characters may be so grouped and contrasted, the succession of incidents so skilfully manipulated, as to sustain without effort the reader's interest and lend to a narrative of real events all the charm and excitement of a work of imagination.

But this kind of history can no more claim a place among scientific studies than a course of novel reading. It has as much and as little right to be regarded as an intellectual discipline as a competent acquaintance with the works of Dickens or Bulwer or Sir Walter Scott. It is quite true that writings which belong to this pseudo-historical class may have great merit in a literary and artistic point of view, and that, regarded

simply as literature, they may be replete with the qualities which constitute the brilliant dramatist or writer of fiction, and so may furnish the student with illustrations of the canons of literary criticism. It is true again that a great historian, along with other and higher qualities, will be all the greater if he possess some measure of those which belong to the pictorial writer of history. It is no mean achievement to make the past live again, to enable us to see in the men and events of bygone times, not mere materials wherewith to cram the memory, counters in the game of politics, data for the working out of social problems, bloodless phantoms flitting athwart the dim-lighted stage of the past, but living and breathing realities,—by the rare art of a creative imagination to make them live again, to bring up before us the statesmen, soldiers, kings, courtiers, citizens, peasants, rulers, subjects, of a far distant age, warm with the life of the present, and to see in their actions and in all the events of their history the ever-varying expression of the same passions which throb in our own breasts.

Moreover, that we may not misconceive or exaggerate the educative function of scientific history, it must be conceded that there are moral influences of a salutary kind which, even when it does not concern itself with scientific problems, history may exert on the ordinary reader's mind. The practical lessons of history, like the practical lessons of common life, may be taught

by preachers who have no pretensions to philosophy, and learnt by pupils who have no interest in it. For one thing, history, like foreign travel, widens a man's horizon and can scarce fail to broaden his views of life, to correct his prejudices, break down his narrowness of thought and feeling, and give his sympathies a wider range. The parochial or insular habit of mind, the tendency to measure all things by local or provincial standards, can scarce survive much converse with the wider world of history, any more than with the men, the customs, ideas, institutions, of other countries and climes. It is philosophy alone, indeed, that looks at things from a purely universal standpoint; but apart from that, it is an immense gain for a man to get his views of things broadened by a wider basis of induction than his own locality or time supplies. We have all learned to laugh at the typical John Bull who goes abroad looking at all things with insular eyes, foolishly contemptuous of everything that diverges in the smallest measure from the orthodox British standard, and even half-convinced that it is pure ignorance or stupidity that makes men anywhere talk French or German, instead of English with redundant or defective *h's*. Yet even *he* cannot return home without some glimmer of doubt as to the universal applicability of the Cockney criterion of the universe; and I need not stay to show how, in like manner, history tends to give rise, even in the most

superficial mind, to some faint appreciation of the true proportion of things.

Again, history obviously tends to train us to a habit of impartial judgment by removing us beyond the influence of the interests and passions of our own time. In an age and country like ours, in which political, ecclesiastical and other differences are so prevalent, it is difficult for even the calmest and most judicial mind to judge impartially of the character and doings of contemporaries. Even educated men can seldom disabuse themselves of the fanaticism of party, or see the persons and events around them, not through the refracting medium of partizan feeling, but in the pure light of truth. It is only what we might expect when the unreflecting herd of camp-followers are heard shouting indiscriminate denunciations of Tories or Liberals, Papists or Protestants, Churchmen or Dissenters; but it is surely a pitiful thing to listen to the fierce, intolerant criticisms of rivals, political and other, in which even highly-cultured men, the very foremost of their time, are wont to indulge.

Historic judgments, indeed, are not altogether exempt from this false bias. I could name big books of history which are only covert political pamphlets, lives of Roman Emperors which are but transparent pleas for, or attacks on, modern Cæsarism, tendence-histories of Greece which are long and laboured arguments for democracy, histories of England which, with some show

of reason, have been described as designed to show that Providence is always on the side of the Whigs. Nevertheless it may still be maintained that history, especially the history of remote times and nations, breathes around us an atmosphere no longer heated by modern divisions and conflicts. Modern analogies for the most part fail us, the passions of modern conflicts cease to stir us, when we read of the great men and great strifes of former days. The battle cries of modern party-warfare die away upon the ear as we enter into the still region of history. The triumphs and failures that meet us there do not affect our personal interests. We can study the actors and the conflicts of past times, the characters of the combatants and the varying fortunes of the causes for which they lived and died, with the unimpassioned calmness of the observer of the phenomena of nature. And, so far, this kind of study is a discipline in candour and moral impartiality.

Lastly, to name only one other of the moral influences of the study of history, it tends to give us a true conception of what is transient as compared with what is lasting in human life. We can scarcely pass in review the events which mark the story of any great nation or period without perceiving how subversive of contemporary judgments of greatness and littleness is the verdict of history. The men whose names survive are seldom those who looked

biggest in their own day. Time takes little account of conventional greatness, and consigns whole hosts of those who possess only arbitrary claims to honour—kings, courtiers, dignitaries, serene highnesses, and important personages of all sorts—to oblivion, and confers historic immortality on many who, in their own day, were obscure or little-noted.

And as with the agents, so with the events in which they were concerned. Almost irresistible is the tendency to magnify the importance of the questions and conflicts of our own day or of our own corner of the world. To those who are engaged in the controversies of a little circle or sect, it sometimes seems as if all Christendom were looking on, or as if some petty ecclesiastical or political squabble were big with the fate of nations. Yet, when we turn to the page of history, we find that, age after age, men have contended with like eagerness for objects which now look ludicrously disproportionate to the interest they called forth. On some of the causes and controversies which fired the passions of communities or countries, kindled fierce animosities, rent asunder domestic and social ties, the grave historian scarce thinks it necessary to bestow more than a page or a paragraph, on others he does not waste a line. On the map of history the molehill that seemed a mountain is left unmarked. A little time elapses and the loud-sounding storm that seemed to men to shake the

world leaves perhaps not the faintest echo on the ear of succeeding generations. It was after all but the brawling of a petty brook, deafening to the bystander, but, a mile off, lost in the silence of nature.

And the reason of this contrast of contemporary and historic judgments is obvious. The men of the highest order, the actions and events that affect most profoundly the progress of humanity, are not those which can be generally appreciated in their own day. Great ideas are slow of bearing fruit, great works and enterprises are long of accomplishment in proportion to their magnitude. The most important discoveries often require long time before the splendour of the results with which they are fraught can be manifested, and their value understood by the multitude. A great thinker is often in advance of his time, and must appeal from the neglect or depreciation of his own day to the verdict of futurity. Though the deeper tide of human progress may be with him, the surface current of popular opinion may be, and often is, dead against him. The very strangeness and originality of his ideas rouse the hostility of the slaves of custom; or the changes he would introduce interfere with the interests of individuals and classes which are bound up with things as they are. If his ideas be true, if his projects and aspirations are in consonance with the eternal order of truth and right, if, in short, his counsel be of God, it cannot come to

nought. Give it time, and it will win the day; but that day may be a far distant one from his own. The spirit of the world moves slowly, and they who appeal to its verdict must be content to wait. On the other hand, the fame for which men of this order have to wait is often the immediate reward of inferior and ignoble workers. The clever exponent of some passing phase of opinion or of the narrow notions of a sect or clique, the man who makes himself the mouth-piece of the passion of the hour, who flatters by formulating or giving a dress of rationality to ignorant prejudice or dull and obstinate obscurantism, the astute, ambitious statesman who appeals to philistinism, to national conceit or the vulgar love of military glory,—for these and such as these, for charlatans and popularity-hunters of all sorts, wide is the gate, broad and ready the way, to notoriety and immediate success. But the penalty is this, that such success is as short-lived as it is swiftly won. He who rises into prominence on the passing wave of opinion, sinks into insignificance with its subsidence; whilst he who by his words and works appeals to those elements of our being which are universal and undying, to the intuitions of truth and right which in the long run sway the spirit of the world, he, and such as he alone, find their place on the page of history amongst those names which the world will not willingly let die.

Such are some of the uses of the study of history

regarded from a moral point of view. But, as I have said, we are at present specially concerned with that study viewed as an instrument of the higher intellectual culture, and only that kind of history can be so viewed which we designate "scientific." What, then, do we mean by a Science of History? In what sense can the term "science" be applied to the record of the past life of man? Now, in attempting to answer this question, it is obvious that, as applied to human actions, individual or collective, we cannot employ the word according to the ordinary usage. "Science," in the ordinary and limited sense of the term, means physical science; but we can see at a glance that there are conditions and characteristics of physical science which can have no place in a science of history. The physical sciences are sciences of observation and experiment; but whilst in a general way we may regard history also as a science of observation, it is distinguished from the physical sciences by this essential and all-important characteristic, that in history the phenomena never repeat themselves, and can never be reproduced.

It is the enormous advantage of the student of nature that, given the same conditions, the same results will infallibly recur, and that, in many departments of physics at least, the phenomena either do recur periodically and with unvarying regularity, or can be made to repeat themselves without the slightest

variation. The observations, for instance, by which according to Kepler's laws, the motions of the planets are determined and their places in their orbits at any given time assigned, can be repeated by a thousand observers age after age and all the world over. The astronomer of to-day can go through the very same observations by which Galileo made his discovery of Jupiter's satellites, and of the periods of their revolutions. Every one who can let drop a guinea and a feather from the upper part of an exhausted glass, and perceives them strike the bottom at the same moment, causes nature to repeat virtually the same facts from which that same philosopher concluded that "the accelerating power of gravity is the same on all sorts of bodies and on great and small masses indifferently." And the great law which asserts that the planets are retained in their orbits by a force which varies inversely as the squares of the distances, can be verified to-day, to-morrow, centuries hence, by every observer who can compare with the exact motions it should yield the facts that take place before his eyes.

I need not waste time by adducing illustrations from the other sciences relating to inorganic and even to organic nature of a principle so obvious. But when we turn to the materials with which a science of history should concern itself, we are no longer in a region in which the observations of one period or time can be reproduced in another. Here the facts do

not relate to a fixed and abiding order; they cease for ever with the single instance of their occurrence, and can never be recalled. Observe them ever so accurately, trace them most precisely to their causes, yet the same causes, even if you could reproduce them, would never give rise to the same results. Reassemble the conditions of a physical fact or event, and inevitably the same fact or event comes to life again. Reassemble, if you can, all the conditions under which a historic event takes place, proclaim that you have detected an essential and invariable relation between a certain environment and certain modes of human activity, and that thus or thus an individual or community are sure to act, and the event will almost certainly prove the futility of your calculations.

And the reason is, that in the case of physical nature you are dealing with an order which, for the most part, is uniform and permanent; but in the case of history you are dealing with that which is not permanent but progressive, or, at any rate, which is continually changing, with a material which has in it an element of perpetual originality, and in which the same external conditions in no two instances produce the same results. Nay, it may even be said, that here the very fact that an act has once been done is a reason why it should never be done again. For the ideas and events of the past, the thoughts which men have thought, the struggles, failures, triumphs, con-

quests, the whole intellectual and moral history of bygone times is the material out of which has grown the new life of the present. All that poets have sung, and philosophers taught, and statesmen, heroes, patriots have accomplished; all the varied elements that have constituted the characteristic spirit of each family and nation and age of the bygone life of humanity,—all these are the innumerable threads that are woven into the complex web of the world's present life, the element which the ever-growing organism of humanity has assimilated, and which make it impossible for it ever again to be what at any former stage of its history it has been.

It is true that individuals may of set purpose repeat their former acts, or may imitate the acts of other men. But an act done with the deliberate consciousness of and intention to copy a former act, either of ourselves or others, is not the same as that act. We have added to the motives, whatever they were, which led to the typical action, the new motive of intention to imitate, and this gives to the copy an entirely different complexion from the original. In like manner individuals or societies may attempt to reproduce the past. In their admiration of a former time they may set themselves to resuscitate its forms and institutions, to think as men thought and do as men did in an age, as they suppose, of simpler motives and purer lives, or at a period that

lay nearer to the fount of inspiration, when the stream had not become turbid by distance from its source. But, whether in political or ecclesiastical life, such attempts to galvanize the dead spirit and life of the past are as vain as they are foolish. Men may revive what they call primitive customs, re-introduce the cloister life into a world of railways and stock exchanges, or deck themselves out in the gew-gaw robes of mediæval ceremonial; just as a grown-up man might set himself to speak in baby talk, or clothe himself in the bibs and tuckers of his childhood. But such revivals can never be other than forced and fictitious. What was once real because it was the natural spontaneous expression of living thought and feeling, is no longer real when done consciously by men who are breathing the changed life of a new time. They are only make-believe revivals, as little reproducing the originals as the poor player's regal strut reproduces the genuine air of majesty, or as Don Quixote's tilting at windmills was a real reproduction of the exploits of the knight-errant in the age of chivalry.

But whilst history is not a science in the sense in which we apply that designation to those sciences which admit of the verification of laws by experiment or the exact reproduction of past experience, must it therefore renounce all claims to the name of science? Is the only possible function of the historian that of

the mere annalist, or of the vivid and graphic narrator of facts? Must he be content with the inferior though not unprofitable task of finding out and registering the events which make up the life of nations or of the race, or at most of extracting from them general reflexions and lessons after the manner of the moralist or the preacher? If he cannot detect in the events of the past any such underlying laws as will enable him exactly to predict the course of events in the future, must he therefore give up every attempt at generalization and explanation, and let history take rank at best with those branches of knowledge which are only at the stage of observation and classification of facts, and where the facts have not yet succumbed to any endeavour to theorize or to see in them the expression of general principles or laws? We know that there are departments of science in which, though as here, the phenomena never repeat themselves, we can yet discern the conditions of change and the laws of progression. Science has to do, not merely with inorganic matter, where the agents are forces that never vary and the phenomena recur with undeviating regularity, but also with matter in the form of organization and life, where, though the objects observed never for any two successive instants remain the same or react in the same way on external conditions, we can yet discern invariable relations between environment and function, and can trace the

presence of permanent laws of growth or development. Is there nothing analogous to this in the phenomena of history?

Now to these questions the answer, I think, must be, that though history cannot claim to be an exact science in the sense in which we apply the name to mechanics or optics, or even to botany and physiology, yet in its methods and results there is at least something so far analogous to these departments of knowledge as to entitle it to the name of science.

In the first place, the philosophic historian claims not merely to observe and record facts, but also in some measure to *explain* them. Here, as elsewhere, philosophy has had to encounter the charge of being contemptuous of fact, turning away from the severe and stern work of research to indulge in ingenious speculations, or in *à priori* constructions of experience according to some preconceived theory. What we ask of the historian, it is said, is, by careful investigation and impartial weighing of contemporary and other evidence, to put us in possession of the facts as they actually occurred at any given time and place. The future may be the field for conjecture and speculation as to the course of events, or for the efforts of contending political theorists to mould society in accordance with their ideas; but history, as has been recently said, "can have no presuppositions, her province is

to recall and not to construct, . . . and she demands from the historian to make his mind simply the mirror of reality, the surrender of his judgment to the decree of the ages, not the projection of his fancies into a region that has for ever passed from the limit of creation, dead to the action and the storm of life, whose tranquil expanse no breath of thought can ruffle, and where the charm is broken when the mirror is moved."

Plausible as this view of the matter seems to be, very little reflection is needed to perceive that it is impossible to reduce the historian to a merely passive or receptive attitude. Even at the lowest estimate of his vocation he must be something more than a mere annalist or chronicler of facts. For one thing, no little scientific insight and activity of mind are often needed to determine what the facts really are. There are periods of history with respect to which the sources of knowledge are so obscure and turbid, the evidence for particular events even of the most important character so conflicting, the residuum of fact to be extricated from a mass of fable and legend, of unconscious exaggeration and pious fraud so enormous, that the task of the historic critic is one demanding often some of the highest qualities of the scientific mind. Moreover, when the facts have been ascertained, even the least philosophic of historians cannot help letting a tinge of theory infuse itself into his

treatment of them. However limited the period he undertakes to write of, as he cannot tell all the facts, he must select, and selection involves a criterion or principle of judgment as to what is more or less important, that is, it involves a kind of philosophy however crude.

Every historian, it is obvious, must select and epitomize. If a man should undertake, without omission or compression, to tell us everything that was said or done last week in Glasgow, the world would not contain the books that should be written by him, though a very small part of it would certainly contain all the buyers and readers of them. Even those writers of history whose style of narration comes nearest to that of the uneducated story-teller cannot escape the demand for compression. Mrs. Quickly's garrulous circumstantiality is thoroughly true to life. There are many people who are nothing if not circumstantial. They cannot give you an account of any transaction they have witnessed without a minute detail of all the incidents and episodes connected with it. If you try to hurry their pace or bring them to the point, you speedily find that you had better let them take their own way; for the only principle of association in their minds is the order of time, and they can no more omit the non-essential and get to the salient points than a traveller can eliminate the drearier parts of the road in order to reach those

which are worth seeing. A naïve gossiping historian, like Herodotus, may indeed have a charm of his own, but even his prolixity has its limits, and a historian who should carry the minuteness of the conversational bore into literature would soon find that readers have a way of escape which the courtesies of real life often deny to auditors.

A historian then must sift and select; but everything depends on the principle according to which the selection is made. He may select from a purely artistic, or he may select from a scientific point of view. Now it is quite possible that up to a certain point the two aims may coincide. There is a sense, in other words, in which the artistic historian may, nay must, be an unconscious philosopher. From the mass of materials which are at the command of both, what the scientific historian aims at is such a selection as will indicate the presence and activity of a law of development either in a particular nation or period, or in society as a whole. What the artistic historian aims at is such a selection as will yield a life-like picture of a past age, and give to the successive parts of his narrative something of the unity, interconnection, and the sustained and gradually deepening interest of a dramatic or epic poem.

Now it is easy to see that, in the mind of a very great historian of the latter class, the artistic impulse may unconsciously lead to precisely that selection and

grouping of events which would best subserve the purposes of the philosopher. A great portrait-painter may be no psychologist, but the representation he produces of a subject worthy of his art may have in it all the effect of careful psychological analysis. He does not reproduce on the canvas everything he sees, still less everything that a microscopic examination of the face and form of the sitter would reveal. He selects and omits; he manages light and shade so as to bring into relief this feature and subdue or slightly indicate that; he catches evanescent gleams of expression, subtle suggestions of pose and gesture; he seizes on all that is most characteristic, and brings out in just and accurate relative proportions what is significant and what is unimportant, and so in the masterly result he sets before us, by a certain instinct of genius, a representation of the whole life and spirit of the man which is in marvellous coincidence with the results of a scientific analysis of his life and character.

In like manner a great historian who aims at nothing more than a life-like picture of a past epoch, may, led simply by the artistic impulse, tell the story of a nation's fortunes so as to produce an impression singularly correspondent with the results which the scientific historian brings out. Ranging over the vast mass of seemingly heterogeneous materials with which he has to deal, and impelled simply by the unconscious

effort after unity of effect, he seizes intuitively on the events that have gone to mould or that express the spirit of an age or the characteristic genius of a people. From the scattered and complex details of war, conquests, migrations, of ethnological and geographical conditions, of legislation, diplomacy, finance; from the records of courts and camps, of the lives and characters of kings and courtiers, of the exploits of heroes; from the multifarious facts bearing on the rise and progress of literature, art, science, religion, of manners and customs, of commerce and industry, of culture and civilization—from this labyrinthine heap of details, he fastens by a certain ideal instinct on those elements which furnish a clue to its meaning, and which enable him to give unity, connexion, relative proportion, harmony and significance to the whole. Thus it may happen that a writer who aims at nothing more than producing a faithful and interesting narrative may, by his selection and grouping of his materials, by the relief in which the grander features of the picture are brought out, by the ignoring of many things and the slighter touches he bestows on others, by the order into which the successive incidents are thrown, by the skilful management of perspective, by the masterly employment of the many concurrent elements which contribute to unity of effect—such a writer may in his own way produce a result which will be in wonderful coincidence with the conclusions of the scientific historian.

Must we then conclude that the work of the latter is superfluous? If we can get the results of science without the painfulness of the process by which they are reached, if the severest problems of philosophic investigation can be solved for us while we seem only to be listening to a moving tale, why should we voluntarily undergo the mental exertion which the former demands? I answer, there are many reasons why in the province of history artistic narrative cannot supersede science. Not to urge that the genius which anticipates in a concrete way the results of scientific enquiry is of the rarest order, it is to be considered that it is, from the nature of the thing, only to a very limited extent that history can lend itself to the purposes of art, and that, beyond that point, it can only be made to do so by the sacrifice of truth to effect. The historic artist is under a strong temptation to tamper with his materials. Amongst the English historians of the last century there is perhaps only one who combined conscientious accuracy with gracefulness of form, and the majority of historians, ancient or modern, are practical proofs of the difficulty of this combination of qualities. If they are elegant, they are inaccurate; if they are accurate, they are dull. And the reason is obvious. A writer who sets out with the intention of being always interesting in the sense in which a novel or a play is interesting, is under a strong temptation to manipulate his materials,

or, at least, not to be rigidly faithful to them. If the facts do not suit his purpose, he is apt to act on the principle that it is so much the worse for them. And the facts often do not lend themselves to the purpose of dramatic effect.

A writer of fiction is never in doubt about his facts, for he can create them at will; but, as we have seen, the real facts of history are often hard to reach, and that only by a process of critical investigation, careful appreciation of evidence, and subtle reasoning from antecedent probabilities, which arrests the flow of the narrative and has no interest for the unscientific mind. So, again, it is an immense advantage to the writer who wishes to make his story effective, that he can introduce the characters and incidents at the precise time and place which the development of the plot requires; that he is always behind the scenes and can never be in doubt as to the motives of any one of the *dramatis personæ*, and can make them appear and disappear or finally vanish just as the exigencies of the story require; and, to name no other point, that he need never introduce a single irrelevant word or action, or from beginning to end let anything intrude itself which does not contribute to the movement of the narrative.

But, in these and other respects, history often refuses to lend itself to the purposes of art. There are long lapses of time in which nothing very interesting

takes place, yet the record of whose dull transactions cannot be omitted from the faithful historian's page. The characters of real life, again, are often strangely intractable from the artistic point of view: they are not always in keeping with themselves; they do not group themselves so as to set off each other's qualities; they come in when they are not needed, or lag on the stage when the interest of the story requires that they should disappear. The springs of action and the causes and consequences of events are often difficult to trace; and to piece out imperfect, fragmentary knowledge so as to reach even probable results, demands a kind of intelligence wholly different from that to which the picturesque narrator appeals. And, to name no other obstacle to the artistic treatment of history, there is this, that neither in its parts nor as a whole does history round itself off into the completeness of a work of art. The story of each individual nation or period can never possess any dramatic completeness in itself, and even the history of the race can have for us only the unsatisfied interest of an unfinished tale, a drama that is suddenly interrupted, the plot of which is as yet scarcely intelligible, and the far-off denouement of which we can at best only dimly guess.

But whilst thus it is from its very nature only to a very limited extent that history lends itself to the purposes of art, or can be invested with the attractive-

ness of art without sacrificing truth to effect, we are brought back to the question whether and in what sense it can be brought within the range of science; or rather,—since, as we have already shown, the question must, in the ordinary meaning of the word science, be answered in the negative,—whether philosophy, which claims to be the science of sciences, to deal with the ultimate problems of thought and being, to trace the secret links of that chain which binds together all thinking things, all objects of all thought,—whether philosophy can be accused of presumption when it attempts to introduce the light of reason and intelligible law into the seeming confusion and complication of human history.

The examination of this question it is impossible to overtake in the present lecture. Leaving it therefore for future treatment, I shall only say in conclusion, that if the answer to it be in the affirmative, if we can discern law in history—a secret order of reason in the life of nations and of the world—the study must be one of the most profoundly interesting to which human intelligence can be directed. It must possess attraction for all classes of minds, but especially for the philosopher and the theologian. Philosophy must find its account in studying it, for it is true of man above all other beings, that to know what he is we must know what he has been. Even the individual mind cannot be understood by making it simply the object

of immediate observation. To know it you must study the process of its development, see how one form or stage of consciousness rises out of another, retrace the course of that genetic movement through which mind or intelligence has come to be what it is.

But the individual is himself the part or member of a larger whole. His consciousness is steeped in the thought and life of the age in which he lives, and that again is the living result of all the past stages through which the thought and life of the race has run. Every step by which humanity has emerged from the life of nature and risen to what it now is in the most civilized portions of the world, has left the traces of itself in the present consciousness of mankind. And though it is true that the results of the process are present here and now in us, and we can, in a sense, by introspection and self-observation discern them, yet it casts a new and wonderful light on the meaning of our own minds, and on the significance of that intellectual atmosphere or spirit of the age in which we live and breathe, to turn back and observe the long discipline of the ages, the slow and cyclical movements by which, step by step, humanity has come to be what it is.

Lastly, for the theologian this study must ever be one of surpassing interest; for the philosophy of history is only the scientific expression for that which he means by "the providential order of the

world." To find law, order, rational sequence of causes and effects in the life of nations and of the race would at least be an approximation to that view of human affairs which the theologian takes, when he speaks of a divinity that shapes our ends, or of the finger of infinite wisdom regulating the course of events and determining all things according to a predestined purpose. The problems which baffle us when we look only to the individual life or even to the destinies of peoples and natures, if they are not solved, yet become clearer to us when we take in that larger field of view which history presents. The sense of justice which seems to be implanted in us only to be thwarted and outraged, the reckless waste of human life, the capacities, hopes, aspirations, to which the poor results of the most successful lives seem so miserably disproportionate,—the whole aspect of human existence which, when we look at it only on the contracted scale of individual or even of national life, seems so sombre and inexplicable,—on all this darkness and perplexity we discern at least some light beginning to dawn, when we turn to contemplate human existence on the larger scale of history.

Judged from the individual point of view, human life is often, in one sense always, a failure. We are never the thing we seem designed to be. There are in our nature the materials and the beginnings of great things, which are never realized. We can form lofty

ideals of moral and intellectual perfection, but they only serve to throw contempt on the poverty and meanness of our actual life. And as we retrace even the history of nations, and see how in the very greatest of them a period of growth and energy is almost invariably succeeded by a period of exhaustion and decay; how ancient civilizations have sunk back into barbarism; how ancient empires and commonwealths, once in the forefront of human progress, and by the splendours of their art, their literature, their social and political freedom, raised to the pinnacle of greatness, have succumbed to slow decay and ceased to be living forces in the history of the world,—is there not room for the despairing conclusion that human life is but a thing of blind chance or even the sport of some arbitrary power?

It is here that the thoughtful study of history comes in, if not absolutely to verify, at least to lend new significance to the beliefs and hopes of religion. For as we ponder its lessons we begin to catch a glimpse of a larger and more comprehensive design, which embraces and transcends the lives of individuals and nations; and the anomalies and incongruities which perplex us in the latter begin to vanish when we view them as only fragments of a larger whole. As the philosophic historian leads us to apprehend the underlying idea, the characteristic spirit of a people, or of an age or period, to trace its influence

on succeeding ages and on the general current of human progress; or as again he enables us to see gradually emerging from the chaos of declining empires in the old world the richer civilization of modern times, there begins to rise before us the idea of a collective or colossal life, of a personality which does not grow old or die, which has in it a capability of infinite progress, and which, while these seem to come and go like shadows, goes on from age to age, broadening, deepening, developing in knowledge and power and freedom. The study of the past begins to inspire us with new hopes for the future of humanity. The life which, viewed from without, seems in us, and thousands such as we, so petty and trivial, catches a new significance and even grandeur from the thought that it is not the isolated, transient thing we deemed it. We begin to perceive that no earnest effort for the good of humanity is ever lost, no life, however obscure, that has been devoted to the highest ends, to the service of mankind, to the progress of truth and goodness in the world, is ever spent in vain. For we can think of them as contributions to a life which is not of to-day or yesterday, but of all time—a life which, never hasting, never resting, is through the ages ever advancing to its consummation.

THE SCIENCE OF HISTORY.

November 7, 1885.

At the beginning of last winter session I made some remarks on the study of history. On that occasion, however, I was able to undertake only a fragment of the subject, and though, as you will see, the same is true of the present lecture, I must, at least, before leaving it, make some attempt to answer the question with which I could only imperfectly deal, Is history capable of scientific treatment?

I suppose it would be universally admitted that knowledge which has not been elevated above the domain of facts, or of facts of mere observation which have not become in some measure reduced to law, illuminated and harmonized by intelligible principles, cannot be regarded as a fit instrument of the higher education. The expediency, in other words, of introducing the study of history into a university curriculum turns upon the question whether history admits of being scientifically treated. What then do we mean by a science of history? In what sense can the term

"science" be applied to the record of the past life of man?

In attempting to answer the question I began last session to point out certain reasons why, as applied to history, we cannot employ the term "scientific" according to the ordinary usage. Science, in the common and limited sense of the word, means physical science; but we can see at a glance that there are conditions of physical science which can have no application to history. The physical sciences are sciences of observation and experiment; but whilst in a general way we may regard history also as a science of observation, it is distinguished from the physical sciences by this essential and all-important characteristic, that in history the phenomena never repeat themselves and can never be reproduced. Our very knowledge of the past, if there were nothing else, prevents us from reproducing it. We may, indeed, attempt to imitate the forms and institutions of a former time; but we cannot recall the spirit that expressed itself in them. And artificial revivals are as little like the originals as the corpse is like the living man. We cannot, therefore, have that kind of knowledge of history which we have of those phenomena of nature which continually repeat themselves in the same unvarying cycle of change. But of this I have already said enough, and I wish in this lecture to direct your attention to another point.

It may be maintained that the same method of treatment cannot be applied to nature and to history, because the former belongs to the sphere of physical necessity, the latter to that of consciousness and freedom. Freedom, indeed, is not lawlessness. The spiritual world is not the domain of incoherence and caprice. The nearer an intelligent being approaches to the true ideal of his nature, the more is arbitrariness, waywardness, irregularity eliminated from its actions, the more absolutely is its career determined by invariable principles or laws. Irrationality is the sphere of chance, rationality and morality that of laws as uniform and inviolable as those which determine the orbits of the stars or the course of the seasons. Nevertheless, to say that the spiritual world is the realm of consciousness, of intelligence and will, is to say that its phenomena cannot be embraced under the same categories or explained by the same methods as those which are employed by the interpreter of nature. Bring with you to the study of man and human life, individual or collective, only the conceptions which guide the investigator of physical science, and you will either find your enquiries baffled, or achieve results which leave out of account the very essence of the problem to be solved.

You may create a so-called science of history by forcing spiritual realities through the sieve of natural law; but in so doing you have left out the very

elements which differentiate man from nature. You have extended the domain of natural law so as to embrace man, but it is only by reducing man to the level of stones and plants, or by treating spiritual life as nothing higher than the life of a beast. Over the whole compass of the inorganic world the law of physical causation extends: can you, save by a misuse of language, comprehend within its scope the thoughts, volitions, and actions of moral and spiritual beings? When you talk of motives as the causes which determine the human will, or of human actions as being subject to conditions as determinate as the motions of the falling stone or the path described by a projectile, and therefore of the possibility of creating a science of "social statics" and "dynamics," there is one element present in the former and not in the latter, which refuses to succumb to your physical organon. Force moves matter, motives govern the human will. The ball struck yields to the external impact; measure the amount and direction of the force, and you have all the conditions necessary to determine the result; so you say, find out the predominating motive, and volition and action can with like certainty be ascertained.

Yes, but there is one thing here that was not there —the mind does what the material agent does not; it thinks the force that moves it. The external influence is nothing till it is taken up into the sphere of

consciousness. A motive does not drive or shove the mind from without, it is the mind and spirit of the man himself that creates it and lends it all its force. It is that which is moved which gives its existence and its constraining power to the thing that is conceived to move it. In no single human experience can you treat the agent as a passive thing impelled by a foreign force. And so when, in the misdirected craving for simplicity, you try to extend the domain of natural law over the subtle, impalpable phenomena of spirit, you may say that, as force is the cause of motion, so the love of money is the cause of theft, so injuries are the cause of hatred, and hatred and malice the cause of cruelty, or, in general, that the desires and passions and the things that appeal to them are the causes of the infinitely varied and complicated phenomena of human life and history; but it is only to the ear that there is any identity of relations in the two cases, and only because of that verbal identity that you can embrace things essentially so different under a common formula.

In like manner, again, in regard to the organic world, we may speak of biological laws extending to the spiritual world, of the "relation between function and environment," of "natural selection," and the "survival of the fittest," and I know not what else, as formulæ which will explain the relations of the world of thought and life. But here again, that

which constitutes the distinctive character of the spiritual world is just that which makes such explanations inapplicable and futile. It is because man is a spirit and not an animal that history is the record of a progress to which the biologist expert has no key.

Civilization is not the result of the forces of nature, but the issue of a struggle with them. Its best results are those in which an agent physically weak sets at naught the power of matter and material environment. In the struggle for spiritual existence physical strength counts for little, and a grain of thought goes further than any amount of rude, undisciplined animal power. And still more does religion, the mightiest of all social agencies, suspend and overrule the forces of nature. In the spiritual world there can be no competition for supplies, of which it is the very essence to be infinite. If in the natural world we have a sphere in which the results are determined by individual strength and fitness, in which the strongest survive and the weak inevitably go to the wall; in the spiritual world we have a sphere of which it is a primary law that the strong shall take upon themselves the burden of the weak, arrest the natural results of infirmity, and prevent the exterminating activity of natural law.

Not to dwell further on this point, I will only add that there is one presupposition which all

attempts to find in human history a field for the application of strictly scientific laws necessarily involve. On one condition you can create a science of human life and action, viz., that man is no more than nature—a rarer combination of matter, a more complex animal organism than all others, it may be, but still essentially material. There are, indeed, human beings, it is not to be denied, of whom this presupposition is not far from being true. There are individuals and societies of whom it may be said that they are little more than products of nature, and whose existence from beginning to end presents no other and deeper problem than the life of plants and animals. Even in the very heart of civilization there are men, not a few, who exist and act as if the intellectual element had been omitted from their composition. They vegetate through existence—occupy a certain space, consume so much food, grow up, continue the species, decay, and then vanish from the face of things. Or if this harmless simplicity pertains to few, there are multitudes whose life differs from the animal life only in the possession of a sufficient measure of intelligence to deprive it of its innocence. And outside the pale of civilization there are whole races of human beings who are, and for aught we know have remained for ages, at an almost purely animal level, or in whom the passions of the animal are tempered only by childish super-

stitions and attempts at language rude as the babblings of infancy. Such men and races have no history any more than herds of cattle. You can predict their actions as surely, because the conditions of them are as automatic, as those of societies of ants and bees. If all men were such as these, the phenomena of human thought and life could be scientifically treated, because they would constitute simply a branch of zoology; and that all men are no more than this, is the principle on which a so-called science of history must proceed.

But whilst it is just the fact that man is capable of a history that renders his life incapable of being treated scientifically (in the limited sense of the word), it does not follow that we must abandon the attempt to penetrate to the meaning of human life, and regard the phenomena of history as only a chaos of events in which no order or rational significance can be discerned. Though you cannot contemplate human actions as you do the lines, surfaces, solids, of a mathematical problem, or foretell their results as you can those of a chemical experiment or even of a biological process, human life is yet not without an order of its own which reason may attempt to grasp. All education is based on the presupposition that there are definite laws of human development on which you may proceed in shaping the course of a human spirit towards an ideal end; and this suggests

the enquiry whether, underneath much that is irrelevant and accidental on the surface of history, there may not be going on through the ages the silent progressive course of an education of the race.

All epic and dramatic poetry again is the unconscious expression of the belief that there is an intelligible rhythm in human life. The mirror which poetry holds up to life does not simply reflect unchanged the facts and events that pass before it: a dull prosaic reproduction of our own sayings and doings would fail to interest or move us. Led by the unconscious instinct of genius, the poet, by selection, omission, and grouping of materials, by ignoring what is irrelevant and managing details with a view to unity of effect, by making the whole movement and succession of incidents work up to a foreseen result,—by these and other means seeks to present to us a picture or suggestive image of the deep moral significance that underlies the common life of man. And to that hidden element which, led by an artistic impulse, the poet seizes and reproduces on a smaller scale, may there not, we are led to ask, be something corresponding on the grander stage of human history as a whole? If it is only to the unreflective eye that the life of humanity seems but

> "The fretful foam
> Of vehement action without scope or term
> Called History";

if it be at least possible that there is in it something of the ordered sequence, the moral significance, the movement and convergence of events towards a definite end, which we imply when we speak of the drama of human life, it is conceivable that the philosophic historian may be able in some measure to grasp in the form of reason and reflection what in his own more limited sphere the dramatic poet intuitively represents in pictorial form.

Whether philosophy possesses any organon of knowledge by which this result can be achieved, it is impossible here to discuss. All that I can do within the course of a single lecture is to indicate in briefest fashion some of the ways in which it has been attempted to give unity to the facts of history. The phenomena of history consist of human thoughts, actions, passions, and when we address ourselves to the effort to give unity and continuity to such phenomena, it is natural that we should turn first to the only type of such unity and continuity with which we are conversant—that of our own individual life. The first suggestion of an explanation that is likely to occur to a human observer of the life of humanity is that he may find himself writ large in it—that the story of mankind may be only the story of individual life on a larger scale. May not the progress of man from childhood to age, the dawn and development of intelligence, the emergence of

reason from impulse, the struggles and conflicts of the passions, the joys and sorrows, successes and failures, the chequered incidents which mark the career of each human soul, the formation of its character and the shaping of its destiny from birth to death, find themselves reflected in the life of a larger personality whose fortunes pass before us on the moving canvas of history? This conception may seem at first little more than a figure or poetic analogy, but there are not wanting considerations which give it at least a *prima facie* plausibility.

The dawn of human history has often been conceived of and depicted as a period of childlike innocence, when man was but the child of nature, in harmony with nature and with himself. Pious or poetical imagination has delighted to dwell on the idyllic dream of a state of innocence, when life was but one long holiday, when spontaneous impulse was its only law, when its unsought happiness was undisturbed by the fatal boon of knowledge, by the strife of reason with impulse, by the restlessness of unsatisfied desires, by the conflict of the passions, by the pangs of disappointment or the stings of conscience.

It is easy, again, to follow out the analogy through the further stages of life—to find, for instance, in the early historic annals of mankind the traces of a long minority of the race, or, at any rate, of particular nations, in which they were "under tutors

and governors," and the yet undisciplined desires and passions of the natural man were subjected to the iron rule of external authority and law. Our sacred records tell us of a race who were for ages at school, isolated from the wide world around them by stern limits which no truant impulse was permitted to transgress,—of a period when the immature spiritual intelligence, unable to apprehend truth in its abstract purity, was trained by a pictorial ritual in which ideas were conveyed in the form of illustration and symbol, and when the moral nature, yet incapable of self-government, was subjected to an elaborate system of rules, prescriptions, prohibitions, extending to almost every action of human life. And then the same records lead us to contemplate the course of human education advancing through long ages and varying fortunes, in which the magic circle of isolation was gradually broken, and by conquests, by distant captivities, by foreign emigrations, the influence of the thought and experience of the Eastern and Western world was brought to bear on the adolescent spirit of the long secluded race; till at length, "in the fulness of times," a period came when the school discipline with its arbitrary rules and restraints passed away, when outward authority gave place to the inward light of heaven-born truth, and the spirit of man, having reached its maturity, started on a new career of freedom, with new

dangers and trials, yet with new and grander hopes and aspirations.

My limits forbid me to follow into further detail this notion of a life of humanity analogous to that of the individual. That it is defective as the principle or basis of a scientific theory, it needs but the briefest reflection to see. Its main defect may be said to be this, that it is an attempt to explain the whole by that which is only a part or member of it. A member of an organism can only be understood by the nature of the whole, not the whole by the nature of any particular member. The parts of a stone or other homogeneous substance are only repetitions of each other, and any bit or fragment may be taken as a specimen of the whole. But a living organism is not a mere aggregate; it is a systematized unity, each portion of which has its place and function. The totality is something more than the sum of the parts. There is besides the invisible element of order, proportion, diversity of form, distribution of function according to a general idea or end; and that idea you must grasp in order to understand the nature of any individual part. Moreover, whenever we introduce the idea of growth or development, it is impossible to understand the present aspect or state of any individual part without taking the past of the whole organism into account. The fruit or flower is not the fruit or

flower of any one portion of the plant, but of its whole past life.

Now of man above all other beings it is true that it is impossible to understand the individual as an individual—without reference, that is, to the social environment in which he lives, and the history of the family, the nation, the race to which he belongs. As an isolated individual he is as unintelligible as a severed limb if we knew nothing of the body to which it belongs. His consciousness involves the life and consciousness of others, and is steeped in the thought and life of the intellectual and moral atmosphere in which he lives. Take away from him all that is his by inheritance, all that is in him simply as a relation to other beings around him—all affection and sympathy, language and the ideas dependent on it, beliefs, habits, customs, conventions which grow out of his social life, all that is in him as a member of a particular family, as participating in the spirit and genius of a particular nation, as the child of this century and not of any prior one, as breathing the spirit of his own time—take away all these constituents of his being, and what you have left is not the man but a bare abstraction.

And the contemporary environment itself is no self-originated, self-intelligible thing. It is the living result of all the various streams of culture which make up the progressive civilization of the world.

Every one of these lives in it, transmuted but not annihilated. The form of time has dropped from the early struggles of man with nature, from those innumerable events and actions which in successive ages distilled themselves into great movements of thought and epochs of history, from the migrations of the Aryan race, from Jewish, Assyrian, Egyptian, Greek, Roman civilizations; but there is not one of them which in its vital results has not been absorbed into the living spirit of the present age. Thus the whole existence and career of the individual is conditioned by history, and cannot therefore be taken as the explanation of it. To know social man we must know society, to know historic man we must know history.

But if thus we cannot derive from the individual life an explanation of history, are we not led to ask whether some light on the meaning of both may not be derived from reversing the process, and trying to find in history, in the life of nations and of the race, that which explains the seeming anomalies in the life of individual man? The beginning and end, which we never find in any single life, or even in all contemporary lives, may we not find in a life which embraces and transcends them? The sense of justice, of dramatic finish and equipoise, which is utterly baffled when we stop short with the career of the individual, does it find any satisfaction in watching the entail of good

and evil in the life of nations or in the common fortunes and destiny of the race? Is it a mere realistic fiction when we speak of a nation as something more than a collection or sum of individuals—as a real living personality, endowed with a consciousness, a will, a continuous life,—of which individuals are only the specialized organs, and as receiving through successive ages the reward or penalty of its good or evil deeds.

When we contemplate the rise and progress of any great modern nation—our own, for example—its slow emergence from barbarism, its gradual advancement in industry, in the arts of life and the wealth that springs from them; when we see it gathering strength to resist foreign aggression and secure a free path for the working out of its own destiny; when we notice how its nascent sense of freedom rises in revolt against the deadweight of tyranny and of arbitrary power in individuals or classes, and enables it to quell the internal diseases of lawlessness and disorder; how there come to it times of rapid advance, succeeded by times of reaction and relapse—now a crisis of effort and aspiration, now a long period of lassitude and intellectual and moral relaxation; how, finally, through the long discipline of ages it gradually awakens to the consciousness of its own greatness and of the obligations it involves, acquires a distinctive moral type of character, a reputation

for justice and veracity and honour which it dare not sully, which it feels impelled to maintain in the eyes of the nations, in the public opinion of the world,—when we contemplate thus the unity and continuity of a nation's life, the sure transmission and growth from age to age of character, and of the honour, power, and greatness which are its rewards, is it not something more than a mere figure when we ascribe to it a personality whose larger, wider destinies transcend and explain the anomalies of the individual life?

And is not the converse aspect of the same idea equally sanctioned by history, when we contemplate in the corporate life of a nation the chronic social disorders, or the general decay and decrepitude, which, though they profoundly affect the happiness of individuals, are from an individual point of view inexplicable? That demand of the conscience for retributive justice, which is often bewildered and baffled when we contemplate unpunished wrongs, prosperous baseness, selfishness, and the like, is it not at least partially met when we turn to observe the sure entail of evil in the moral life of nations? A man may prey upon his kind and suffer no loss, but a nation cannot. It is only in fiction that the villain comes to an untimely end; in real life he not seldom dies in the odour of sanctity: but for the sins of society the day of vengeance never fails to come.

Is there no running sore, no internal ulcer troubling

and harassing at this moment the corporate life of England, and of which the explanation can only be sought in the selfish recklessness, oppression, and wrong of a bygone period of her history? Are there not nations, European and Asiatic, in other days the greatest and most powerful, the envy or the terror of mankind, filling the world with the fame of their warlike virtues and the splendour of their social life, or illustrious for their literature, their art, their commerce, their conquests, their political power, their far-spread dominions by sea and land,—now sunk to the very dregs of social and political imbecility, the pity and scorn of the world, with none so poor and weak amongst the community of nations as do them reverence? And in this their present degradation can we not discern the silent operation of that eternal justice which, though its cyclic movement far exceeds the compass of our little life, yet in the long run, seen on the vaster scale of history, visits iniquity and wrong with a slow but inevitable retribution.

I find that I must at this point arrest the discussion of the subject. There is, however, one question which the foregoing train of thought suggests, and on which, in conclusion, I will make a single remark. We have seen that the analogy of the individual to the national or corporate life is a very imperfect one, and amongst the points in which it fails there is one to which I have not yet adverted. In the individual life there is

in all cases, and by a necessary law, decay as well as growth. The vital forces in the individual reach their maximum of energy, and then begin to fail and become gradually exhausted. Is this true also of the life of nations? Do they too, by an inevitable law, grow old and die? As we retrace the course of history, we tread on the ruins of ancient civilizations, of empires and commonwealths which flourished for longer or shorter periods and then passed away. The course they ran was sometimes rapid. Successions of hardy and warlike tribes emerge from a prehistoric existence, rise into power and prominence, and then, enervated by luxury, lose speedily the qualities that enabled them to conquer, and succumb, each to the next tribe or horde that appears armed with the fresh energy of barbaric youth. Others have a career that seems for a while to promise perpetuity, but even in the case of the very greatest of them, we see a period of growing energy, physical and intellectual, succeeded by a time of arrested progress, of social and political decay and dissolution.

And the philosophic historian will perhaps tell us that in this we see the manifestation of a universal and necessary law. A nation, like an individual, may repel the stroke of violence, may survive the paroxysms of civil strife and revolution, may stretch out its life beyond the average term; but the inevitable hour comes when its work is done, its

destiny accomplished. In the great drama of human history each nation has a special rôle; its institutions, habits, traditions, are the expression of a definite form of civilization, its achievements constitute a scene or act in the movement of the play; and when that particular part has been acted, its interest is over, it cannot prolong or repeat itself; the curtain drops, and the representatives of a new portion of the plot enter on the stage. Thus for ever is it a law that the old order changes, giving place to new; and the nations that are identified with the ideas and spirit of a time, can no more prolong their existence than the actors can refuse to quit the stage when their part is done.

But if such considerations check our patriotic ardour, if in the hour of national pride and self-confident strength the lesson of the past seems to be prophetic of the inevitable doom that hangs over us, there is one remarkable difference between the ancient and modern world which may serve at least to modify our despondency. In the modern world a nation is no longer, as in ancient times, the type of a single narrow and exclusive form of life. Material and intellectual barriers do not now, as they once did, impose a limit on a nation's energy and impoverish its vital and recuperative force. There was a time when geographical boundaries, "the dividing mountain, the estranging sea," the pathless desert, shut up in almost absolute isolation the various members of the human

family. The course of a river, the position of a range of mountains, caused civilization to take an independent direction on the hither and further side. There were peoples and tribes that had dwelt so long under the influence of the same climate and soil, the same suns and seasons, the same abiding forms and aspects of nature, that these conditions grew into their being and formed them on one narrow and exclusive type. Language and racial peculiarities added spiritual to material causes of insulation, and prevented the access of a richer and fuller life into the localized spirit and genius of the people. Special institutions and traditions became petrifactions, arresting all flexibility and progress. National superstitions and prejudices became invested with the sacredness of eternal laws. And whatever causes of social corruption betrayed themselves were left to operate unchecked till their destructive force had worked its fatal results.

When we turn to the modern world, it is under very different conditions that we find the career of nations determined. Nationality still exists, and the suppression of it, the crushing out of the peculiar genius and spirit of individual peoples, and the exchange of patriotic virtues for a vague cosmopolitanism, is as impossible as it is undesirable. But within the pale of civilization, the conditions that created the diseases of isolation and prevented their

cure no longer exist. The free current of a common intelligence and a common moral atmosphere suffer no modern nation to be stifled by its own breath. Neither material nor spiritual barriers intercept now the free exchange of ideas, the reciprocity of moral and political principles, all over the civilized world. The discoveries of science speedily become common property. The great productions of literature belong to no one race or people. The mind of educated England is moulded as much by the philosophy, the poetry, the theology, the economic and political science of Germany and France, as by its own native products.

There may still exist such a vice as national arrogance or pride of race. The Frenchman (the rude lessons of experience notwithstanding) may still look on Paris as the centre of the universe. The secret conviction that Great Britain is the foremost of the nations of the world creeps out in our periodical literature and our daily talk, and amongst the half-educated middle class there is often a rooted contempt for foreign ideas and institutions, and for everything that deviates from the orthodox British standard. But the Christian idea of the unity of the race has silently sapped the spiritual exclusiveness that characterized the ancient nationalities, and the modern means of intercommunion have put an end to outward isolation. Thus the diseases incident

to a single national type or constitution, if they are not rendered altogether impossible, are greatly mitigated by the free circulation of the blood through the various members of the corporate unity of nations. Bad laws and institutions, dangerous monopolies, false relations between the various ranks of society, an unwholesome tone of social morality, political abuses and errors,—these and the like causes of national corruption and decay, which, left to themselves, might slowly sap the vital strength of a people, or come to a head in outbreaks of revolutionary violence, are often neutralized and corrected by the influence of international public opinion and the free access of ideas from without. Or, to change the figure, a single nation, like an Alpine climber, ventures sometimes where its footing is insecure, and if left alone, by no effort of its own might be able to save itself from ruin: but it is bound hard and fast to its fellows, and by the all potent international bond the downward impulse is arrested and the danger averted.

Thus, to revert to the analogy with which we started, even if we might speak of the youth, the manhood and maturity of modern nations, our own or any other, there is no reason to carry out the figure and to talk of its inevitable exhaustion and decay. Cassandra prophets may tell us that we have passed our national prime. Rhetoricians may talk of the New Zealand traveller who shall one

day moralize on the broken arch of Westminster Bridge over England's by-gone greatness. But it is a truer as well as a more hopeful and cheering philosophy which teaches us that, wherever the national mind is open to the teaching of experience and the lessons of history, capable of rising above insularity of thought, receptive of all salutary lessons from the thought and life of the past, of all that streams in upon it from the world-wide thought and life of the present, there the only old age that can come to it is one which it need not fear—the old age of tolerance and equanimity and charity, of superiority to passion and impulse and the illusions of immaturity, of that self-confidence and self-respect which long experience breeds—an old age of peace that has been purchased by many a struggle, and of the rest that comes of ripened wisdom and self-control.

THE STUDY OF ART.

November 6, 1886.

LAST year, as some of you may remember, I called your attention to the fact that, amongst the many projected improvements in our University system, one of the most important is the foundation, if not of a School, at least of a Chair of History, and I took occasion to make some remarks on the nature and uses of the study of history. Another and in some respects not less important branch of study is equally conspicuous by its absence from our curriculum. In the sister University of Edinburgh there exists a Chair of the Fine Arts, and also a Chair specially devoted to one of these Arts, that of Music. Here, though the study of Art has a special bearing on many of those industries to which Glasgow owes its wealth, and though there are many indications that in this great community the love of Art and Song is not an extinct or undeveloped susceptibility, we have not hitherto been so highly favoured. In selecting, therefore, a

topic for the present address, I have thought that, partly because it might serve to draw attention to this gap in our educational system, partly because of the interest of the subject in itself. I could do nothing better than offer you a few remarks on the study of Art.

If the higher education ought to embrace all departments of human culture, there is besides science, philosophy, languages and literature—besides those studies which are already included in our University curriculum—one other important department which should not be ignored, viz., that which is somewhat vaguely designated by the word "art." The study of nature is not exhausted when it has been viewed in those aspects of which the scientific investigator takes cognizance. Through the forms, colours, sounds of the material world certain intuitions and emotions are awakened in us which pertain strictly, neither to the intellectual nor the moral, but to what we term the æsthetic side of our nature. And in minds of special susceptibility these ideas and emotions crave for expression in a class of works capable of calling forth kindred thoughts and feelings in those who contemplate them. In the productions of the great masters of the plastic, pictorial, and other arts are embodied ideas and experiences of an altogether peculiar kind, appealing in a special way to our capacities of admiration, tenderness, aspiration, awe; touching the springs

of passionate and pathetic emotion within the breast, and capable of lifting us above ourselves and the conditions of our common life into an ideal world of beauty, which has an existence not less true than what we call the real world for those who have the power to perceive it.

But when we claim for art a place in our scheme of education, it must be admitted that the function of education with reference to art is subject to one obvious limitation which does not apply to the other branches of knowledge. Languages, science, philosophy, history, can be taught by experts, and, with ordinary diligence, every fairly intelligent pupil can become a proficient in them; but no amount of culture, no intellectual application however unwearied, can make a man an artist. Proficiency in this case involves an element which the best cultivation cannot communicate. There is indeed a part, and that a necessary part, of the artist's equipment which can be taught and acquired. To draw, paint, model, to be master of the various methods of execution in the pictorial and plastic arts, are not accomplishments which come by nature or can be attained without long and patient study and practice. Betwixt the fine arts and the industrial arts, there is a wide gap, but they agree in this, that it requires a long and laborious apprenticeship before the learner can become a skilled artificer. The technical skill, for example, which is

involved in the reproduction by the landscape painter on his canvas of the facts of form, of light and shade, of colour local and reflected, of arrangement and grouping of objects so as to give unity of effect, is so great, implies the knowledge of conditions so many, so subtle and delicate, that it can be fully appreciated only by a critic who is himself an expert in the art he criticises. So large an element of success does this technical part of an artist's equipment constitute, that it is apt to assume in the view of experts an exaggerated importance, if not to become the sole criterion of merit. The scorn of popular and uninstructed judgment amongst artists and connoisseurs, and the tendency of art-criticism to become a sort of esoteric mystery, turning on special knowledge and expressing itself in technical jargon, is due to the fact that success in art does imply, as much as success in mathematics or chemistry, a special knowledge and a special skill in the application of it, which can only be attained by severe intellectual toil. Nevertheless they *can* be attained, and they require in order to their attainment qualities and aptitudes no more rare or exceptional than those which are possessed by the average student in other lines of culture. If this were all, there would be no reason why art should not rank with the other departments of academic culture, or why a college should not turn out poets, painters, musicians, sculptors, just as it produces scholars,

doctors, lawyers, divines, in regular and sufficient supply to meet the world's demand for them.

But the difficulty of making art a branch of academic culture is that it presupposes in the pupil a capacity which is not universal, or rather which is so rare as to be practically arbitrary. Poets are not manufactured articles. No methodical discipline, however severe and prolonged, can communicate to the spirit that spark of heaven's fire which transforms talent into genius, and endows intelligence with that nameless, indefinable insight and productive power which is the prerogative of the genuine artist.

In the case of other professions, the function of education is a very comprehensive one, because there is room in these professions for practitioners of almost every order of intellect above the lowest. The world's work would not be done, the demand would far exceed the supply, if it did not content itself often with second or third-rate lawyers, physicians, preachers, etc. But the peculiarity of the artistic vocation is that there is no use in it for mediocrity. Houses to live in, raiment to wear, we all must have, and if we cannot afford to pay for the best, we must needs be content with an inferior and cheaper article. But the world has no need for second-rate poems or pictures. It would not be physically or mentally a loser, if all the producers of such articles turned their attention to an honest trade. The soul of man is not rendered in any sense

richer by reading doggerel verse or looking at vulgar portraits and feeble or indifferent attempts at figure or landscape painting. Inferior technique it may well afford to pardon, if one touch of genius inspires its product. The simplest song or ballad that has in it the ring of genuine inspiration, the rudest wood-cut in which a touch of imaginative feeling or inventive power can be discerned, the roughly-wrought clay cup or vase in whose form and modelling a genuine instinct for beauty can be traced—these and the like constitute a real addition, however slight, to the world's spiritual wealth. But, to make it such, some scintillation of the higher incommunicable element it must possess. And if elimination could be made of all productions which are absolutely destitute of it, if a holocaust could be made of all the vast accumulated lumber of bad or indifferent poems, paintings, and other so-called books of art that occupy space on this globe at the present moment, it is far less than the whole truth to say that the world would be no loser by the catastrophe.

If then there be any truth in these remarks, how can we claim for art a place amongst the other branches of academic culture? If all that can be taught is the technical part, skill in the use of the tools of art (and this, of course, it is not the province of a University to teach), and if the indispensable qualification for the vocation of an artist is one which instruction can never communicate, is not this tanta-

mount to saying that art-culture is incapable of becoming an element of the higher education? In answer to this question, I shall ask your attention to one or two observations on the possibility and uses of the study of art.

I. In the first place, it is to be observed that, though education cannot make men artists, it may help most men to enjoy and appreciate works of art. It is not inconsistent with what I have said to maintain that, though the power to produce may be rare, the power to relish is all but universal. Perhaps, indeed, careful reflection might suggest doubt as to any hard and fast distinction such as I have just referred to between the higher and lower orders of mind. At any rate, it cannot be questioned that the power to recognize and respond to what is true or beautiful in the products of human thought may be possessed by multitudes, who are destitute of the power to create or originate them.

In philosophy and science the men who stand peerless for speculative power or for capacity to penetrate the arcana of nature have been few, but thousands in their own and every successive age have grasped their ideas, apprehended and verified the discoveries they brought to light. The immortal masters of art and song whose names live for ever on the roll of fame it would not take long to count, but the very greatness their names have attained has arisen from the fact that they spoke to feelings and intuitions that are universal.

They would have had no power to charm and thrill the minds of men, if they had not interpreted them to themselves, if there were no slumbering element in the human soul which they had the capacity to awake, no dim, inarticulate thoughts and emotions for which they found a voice. The secret of their world-wide undying empire lay in this, that the living fire of their genius found a fuel of its own waiting to be kindled in the common heart, that the creative imagination in them spoke to a dormant imagination which it elicited and developed in the mind and spirit of humanity.

On this point I cannot dwell further than to say, that human experience is full of indications of what I may call the universality of the art-instinct. The capacity to appreciate the higher kinds of art may be the privilege of the initiated, but even amongst the ignorant and uneducated, and at the earliest stages of human progress, the art-instinct,—rude, untutored, blind, it may be,—manifests its presence. The faculty to which art appeals, the pictorial and poetic imagination, the power to glorify the hard, external facts of outward experience, and to create out of the forms of sense an ideal world of wonder and delight, quickens within the mind at the first dawnings of intelligence. The rough discipline of life may all too soon extinguish the idealizing impulse, but there is a sense in which it may be said that every child is an unconscious poet and artist, and that song

comes earlier than articulate speech. In its moment of exuberant joyfulness, disporting itself in summer hours amidst flowers and sunshine, you will hear the child crooning to itself a low murmur of baby music that gives vent to emotions for which it has as yet no other medium of expression. We know too how vivid is the idealizing faculty in childhood—its capacity to infuse vitality and consciousness into the lifeless objects that surround it, to work up with a kind of incipient dramatic instinct little scenes and plots out of the barest materials; and how, as it wanders by wood and stream, prattles to the running brook, apostrophizes the sunbeam or runs to catch the flying shadow, it can create for itself a little world of imagination that will charm it for hours and days into forgetfulness of the real world in which it lives.

And the same thing is true of the infancy of the race, and of the undeveloped intelligence at all stages of civilization. Wherever men attempt to rise above mere utility and make some effort, however feeble, to adorn and beautify life, the art-instinct betrays itself. The savage who tatooes his limbs, stains his person with streaks of colour or decorates it with feathers and shells, or carves some rude imitation of animal forms on club or spear or paddle, is manifesting the germs of the same tendency which expresses itself in the delicate fabrics and harmonious colours which set off the charms of the modern beauty, in the gems which

sparkle on her fingers and the jewels and flowers that adorn her hair. The buffalo or tiger-skin with which the Indian adorns his wigwam, the rude trophy constructed from the spoils of the chase which he hangs on its walls, are low developments of the same instinct which fills our modern mansions with art-treasures, our rooms and picture galleries with the masterpieces of painting or sculpture.

Racial peculiarities or historic and other conditions may keep this instinct at a low point of development, or for a time in some directions wholly suppress it. In our own country, for instance, for reasons which we need not pause to investigate, the artistic side of our nature, so far as the pictorial and plastic arts are concerned, has, till lately, only feebly and rarely manifested itself; but other expressions of its presence have not been lacking. As one amongst ourselves,[1] following in the footsteps of Walter Scott, and with a kindred sympathetic insight into the nobler elements of the Scottish character, has taught us, in the ballads and songs, the folk-lore and fairy legends of our country—simple, inartificial, naïve in form, yet instinct with the pathos and power, the yearning after the invisible and the ideal, the wonder and awe and mystery of a genuine imaginative inspiration,—in these spontaneous expressions of the genius of the Scottish people, we have the proof that

[1] The late Professor Veitch.

amongst a rude and unlettered race, and in a social state only a slight remove from barbarism, the presence of an unmistakable sensibility for art may be found.

But in this as in other cases instinctive feeling needs and is capable of cultivation and discipline. That which is implanted in man's nature only as an unreflecting intuition must, in order to its perfection, undergo the discipline of education. The spontaneity of nature, though sometimes and in the case of rarely gifted souls it may excel the laboured productions of art, is limited in its range of achievement, and amongst ordinary men the mere natural instinct for beauty will carry them but a little way in appreciating what is really worthy of admiration. In what are called distinctively the Fine Arts an uninstructed taste is, in a great majority of instances, bad taste, and beyond a certain very limited range it will remain insensible, not only to what belongs to the technique of art, to skill, refinement and subtlety of execution, to delicacy of drawing, colouring, modelling, to the things, in short, which charm the expert, but even to the inner elements of grandeur or beauty of conception, of which technical skill is only the vehicle. In the region of feeling we often indulge the thought that taste is a purely arbitrary thing, and that pleasure or delight is the only test of merit. If a man is pleased in a picture by flashy vulgarity, or coarse literalism, or weak sentimentality, or clever sleight-of-hand, at which

a more refined taste shudders, he will not seldom express unhesitating commendation without a suspicion of its justice; and, if everything rests on feeling, who is to dispute his verdict?

The answer is, that art, no more than morality or religion, is a purely subjective and arbitrary thing. Without going into the metaphysics of the subject, which is at present impossible, I venture to pronounce, that in the one case as in the others, there are principles and standards of judgment to which individual opinion must learn to bow, and that we are no more bound to accept in art the verdict of undisciplined feeling than the Christian moralist is bound to accept, as of equal validity with his own ethical judgments, the crude moral notions of primitive times and barbarous races. What the canons of art criticism are, by what methods of instruction the educator is to proceed in developing and training to a refined and rational activity the mind and judgment of his pupil, it is not for me to pronounce. Enough, perhaps, has been said to show that there is nothing in the nature of art to render the study of it impossible as a branch of general culture.

II. But granting that art is a possible study, is it also a useful one? What benefits inward or outward is the student to gain from it? In answer to this question, I shall now say a word or two as to the uses of art as an element of human culture.

It would seem at first sight that an enquiry into the uses of art involves a contradiction in terms. What we seek in a work of art is not instruction or information, not material or other advantages, but simply pleasure or enjoyment. Music, painting, poetry, and the other fine arts, whatever they do for the embellishment or decoration of human life, obviously contribute nothing to the supply of its practical necessities. They may form the luxury of idleness or the innocent pastime of our hours of leisure, but in themselves they have no moral purpose or practical utility; and whenever pleasure clashes with profit, they may even become noxious—diverting, as they do, time and thought from the serious work or sterner tasks of life.

Moreover, the view of the function of art which relegates it to the province of the ornamental as distinguished from the useful, seems to be sanctioned not merely by popular thought, but also by philosophic theory. Amongst those who speculate on the subject the accepted theory seems to be that which is embodied in the phrase, "Art for art's sake," meaning by that, that art is to be prosecuted for itself, and not for any ulterior end. The end of a work of art is not to point a moral or to convey a lesson in science or philosophy, or even to soften the manners and refine the habits of society; but to be, in and for itself, a source of delight. It appeals to what has

been called the "play impulse" in human nature, to the spontaneous enjoyment of activities which men put forth, not for the wages they are to earn or the benefits they are to procure thereby, but simply because they find in the free play of their energies an immediate satisfaction and joy. When the sympathetic observer stands in rapt admiration before some great masterpiece of painting or sculpture, or when ear and soul yield themselves up to the charm of the great composer's art in song, cantata, opera, oratorio, and vague, undefined emotions, passionate or pathetic, are awakened within the breast, no thought of ulterior use or profit crosses the mind. Its experience is that of absorption in present, immediate enjoyment. And, on the other hand, if we think of the attitude of the artist's mind in producing, equally foreign to it is the aim at anything beyond the work itself. He paints or sings or writes simply because the creative impulse is upon him, and he cannot choose but give it vent; because a dream of beauty has taken possession of his soul, and it is joy or rapture to him to express it.

But whilst this view of the essentially non-utilitarian character of art may be freely conceded, there is nothing inconsistent with the concession in claiming for works of art a higher function than that of recreation or amusement, or in the assertion that they contribute in no slight or inappreciable measure to

the formation of character and the intellectual and moral education of the community.

In making this claim, however, it must be admitted that, in one point of view, the principle of "art for art's sake" is profoundly true. The educative function of art is, at best, an indirect one. Whatever intellectual enlightenment or moral elevation is to be gained from works of imagination, to communicate such benefits cannot be the conscious aim of the artist; nor is the merit of his work to be estimated by its didactic excellencies. Bad or indifferent painting or poetry is no more redeemed from artistic inferiority by the moral or religious aim of the author than ill-dressed food or ill-made clothes by the respectability or piety of the cook or tailor. And, on the other hand, a poem or picture may have many of the highest qualities of art, though the subject may be coarse or voluptuous, or the treatment such as to offend our moral susceptibilities.

The poetry of Shelley and Byron contains much which, from a religious or moral point of view, cannot escape censure, whilst the literary form is of the highest artistic merit. The works of Dr. Watts and Mr. Tupper are full of pious teaching and unexceptional moralizing, yet, regarded as poetry, both are execrable. The deepest truth, in short, the noblest moral lessons may be conveyed in a form of art, but it is as unconsciously, with as little of a didactic aim, as

are the lessons which Nature herself is ever teaching. The teachings of rock and stream and sea, the moralities addressed to us by stars and flowers, by autumn woods and mountain solitudes, do not reach us in the form of argumentative disquisitions, but of feelings and emanations which win their way insensibly into the soul. There are better sermons in stones, better books in the running brooks, than human pen ever endited, but the lessons which these unconsecrated preachers address to us are innocent of logic or formal admonition.

"Oh, to what uses shall we put
The wild-weed flower that simply blows
And is there any moral shut
Within the bosom of the rose?
But any man who walks the mead
In bud or blade or bloom may find,
According as his humours lead,
A meaning suited to his mind;
And liberal applications lie
In Art, like Nature, dearest friend,
So 'twere to cramp its use if I
Should hook it to some useful end."

And the reason for what has now been said is obvious. It arises from the very nature of art as distinguished from science. Works of imagination and works of instruction may treat of common subjects. The painter may depict, the poet sing, of the same scenes, persons, events, objects, whereof the naturalist, the historian, the philosopher discourses. But the

aspects in which the two sorts of observers contemplate the common objects are essentially different; nor is it possible to combine in the same work an artistic and a scientific view of a subject, without sacrificing the peculiar excellence of both. In proportion to its merits as a work of science it will be bad as a work of art, and the very qualities which make it good art will make it bad science. The same tract of country, to take a palpable illustration, may be represented in landscape painting and in a map. But the painter who tried to embody in his work the precise and definite information of the map, would make it a wretchedly bad picture, and the geographer would spoil his map, if he tried to introduce the artistic effects of light and shade into his delineation of the boundaries of countries and of mountains, rivers and streams. An anatomical drawing or model and a figure in sculpture deal both with the human frame; but if the sculptor is moved by the desire to display his anatomical knowledge, the ineffable grace and beauty we demand in a work of art vanishes, and what we get is neither science nor art, but only artistic pedantry. Or, to take but one other example, the conflicting and essentially inconsistent aims of science and art are exemplified in so-called didactic poems and novels with a purpose. A novel, say, may be written to illustrate some theory of life or to expose some social or political abuse—the evils of intemperance, the bad effects of the

land or marriage laws, or what not. But what will be the inevitable result? The writer may be in the structure of his mind either mainly artist or mainly theorist. If the art-instinct predominates, there will be a constant temptation to sacrifice the didactic purpose to the exigencies of artistic treatment. Whenever the effective development of the plot would be marred by a too copious introduction of facts or a strict adherence to theory, the art impulse triumphs and fact or theory are ruthlessly sacrificed. If, on the contrary, the writer is too conscientiously bent on the communication of information or the advocacy of a doctrine to care punctiliously for artistic effect, the result is a nondescript performance which gives neither information nor delight.

Though, however, it is not the direct function of art to teach, yet it does teach. Without direct scientific or ethical aim, works of imagination are not only the means of purest enjoyment, but they convey to us an order of ideas of an altogether peculiar kind, reveal to us in nature and in human life much which it lies beyond the province of science or philosophy to disclose, and exert over the moral nature an elevating and ennobling influence, in some respects the more potent that it is not their direct purpose to produce it.

What then, let me ask, is the sort of teaching which it is the unconscious vocation of art to communicate, what is the peculiar class of ideas of which works of

imagination, in distinction from all other productions of human thought, are the vehicles? The answer to this question may be summarily given by saying that it is the office of art to idealize nature and life, or to present their facts and phenomena in their ideal aspect.

Does this answer mean that human art can improve on nature as God made it, or on human life as Providence has ordered it? Can the loftiest genius invent a fairer world, can the most soaring imagination conceive, or the resources of art depict, forms more lovely, lights more dazzling, harmonies of tone and colour more subtle and various than those which we have but to open our eyes to behold. Bring before your minds, for example, any one of nature's ever-changing aspects, and say if the attempt faithfully to render it would not be employment sufficient for the rarest skill of the most ambitious limner who ever handled brush and palette? Light softly tinting the mountain edge at morning, or flooding meadow and woodland and stream with the golden rain of noontide, or flinging abroad with munificence of departing greatness its treasures of purple and vermilion and gold, ere it passes away with infinite gradations of fading splendour beneath the western horizon: the sea rippling up with gentle, scarce perceptible insinuation over the long reaches of the pebbly shore, or rushing with wild impetuosity and hoarse clang of assault on the cliffs of an iron-bound

coast: a mountain lake "in the light of the rising moon and of the first stars twinkling against the dusky silverness of twilight":—what, it may be said, has human art to do with its own inventions when, in myriads of such scenes and aspects, with inexhaustible wealth of loveliness, nature awaits, yet baffles man's utmost skill to copy her? Nay, before he presumes to draw on the resources of his own imagination, let the artist take the commonest natural objects, the merest patch of earth or sea or sky—a pool, a spray of hawthorn, a clump of heather, a cloud floating on the summer sky—and say, whether, after his most patient and protracted toil, he has succeeded in reproducing an exhaustive representation of what is before his eyes?

To this the answer is that, even if it were true that the artist has no other function than to record what he sees in nature, it is not every eye that can see what he sees. Nature reflects herself in the mirror of man's mind, but the mirror in most cases is opaque or dim, sometimes distorted and fractured, and the reflexion takes its character from the medium by which it is produced. For the scientific man the outward facts, confused, accidental, unordered, which are all that the ordinary observer perceives, become luminous with the presence of hidden laws and relations. For the artistic or poetic observer, for the mind that is in sympathy with the soul of things—sensuous forms,

colours, motions, are alive with the spirit of beauty, transfigured with the hidden glow and splendour of a light that other eyes see not—a light that never was on land or sea. And it is his high vocation, not merely to copy, to tickle our imitative susceptibilities by a matter-of-fact imitation of what we saw before, but through the language of imagination to interpret nature, and make us look upon her face "with larger, other eyes than ours."

But we may go further than this, and boldly say that there is a sense in which art does "improve on nature." All art that is worthy of the name is creative, calls into existence something more than the bare facts which the outward world offers to the senses. These are the materials on which it works, but it does not leave them unchanged. It takes them up, pours them, so to speak, into the crucible of imagination, flings aside the mere dross of accident, fuses them anew in the fire of thought and feeling, shapes and moulds them into conformity with its own ideals, and, lo! from its creative hand, forms which eye hath not seen, embodied visions of a land that is very far off, and of which only in our most exalted moments we catch a glimpse, start into life and beauty.

That there is nothing presumptuous in thus claiming for the imaginative arts the power to add something to nature, we may see by reflecting on what takes place even in the domain of what are called the industrial

arts. Every piece of mechanism has in it something more and higher than nature contains. Watches, locomotives, power-looms, steam engines, are not mere natural products. They derive their materials from nature, they take advantage of natural forces and laws, but in their production a new, commanding, selecting, transforming element comes into play, compelling nature's raw materials into new combinations, itself the supreme force amidst nature's forces, to wit, the element of thought, the idea or conception of the inventor. And in like manner in that which we call by eminence the realm of art, everything is based on nature and must, in a sense, be true to her; but that which constitutes the most precious element in the great work of art, that which arrests and holds the appreciative mind, is not nature slavishly copied, literally, mechanically reproduced, but the idea, the inspiring thought, the soul of the artist speaking to our soul and causing nature to shine for us with a supernatural significance and glory.

It is of course true that there is a kind of art which possesses nothing of this ideal element; and that, as there are uninspired day-labourers in art who can, at most, by technical skill produce mechanical copies of common facts and incidents, so there are innumerable patrons of art of the same order, in whose eyes vulgar imitation is the highest or only criterion of merit. But the highest praise which such productions deserve is that,

at most, of clever mimetic legerdemain. They come no nearer to true art than the feats of the ventriloquist to eloquence, or the representations of political and other celebrities in Madame Tussaud's gallery to sculpture.

Who amongst us cannot recall hundreds of exact, speaking likenesses of nobodies, prosaically accurate as the armchairs on which they sit, or the official robes with which they are bedecked—portraits of which the best that can be said is that the subject and the limner were worthy of each other? And to see what true art can do, compare the wooden fidelity of such productions with the relation which a characteristic portrait of a man, worthy of a great painter's powers, bears to the actual fleshly form and features of the subject. Here you have no reproduction of facts as you could measure them by rule and compass. A thousand irrelevant details that would only mislead and distract are left out. What is most significant of the soul and spirit is disengaged from what is purely arbitrary. What belongs to the inner essence of the man is so grasped and rendered that all that meets the eye—look, attitude, action, expression—is instinct with meaning, and everything else is subordinated to that in which the man was most himself, and which made him the special individuality he was. Of a work which thus fulfils the conditions of true art it may be said that in it the subject stands revealed to us more clearly than in his actual presence the common eye

could discern him. Its power to evoke reality is like that which our greatest poet ascribes to memory recalling the image of a dear face and form we see no more:

> "The idea of her life shall sweetly creep
> Into his study of imagination;
> And every lovely organ of her life
> Shall come apparelled in more precious habit,
> More moving delicate and full of life,
> Into the eye and prospect of his soul
> Than when she lived indeed."

And this leads me to add, lastly, that it is the function of art to idealize not only nature but human life; and it is by the highest of all arts, poetry, and that which differs from poetry only in form, prose fiction, that this function can best be fulfilled. What a characteristic portrait is to an individual a great epic poem may be said to be to the life of a nation or the spirit of an age. A great dramatic poem or work of prose fiction, by the selection of its characters, actions, events, by the elimination of what is accidental and irrelevant to the main design or motive, by the evolution of the plot and the gradual and natural movement towards the denouement, compresses into brief compass an ideal of the moral life of man which no literal record of facts could convey. Here, too, realism is not art, or at best only an inferior kind of art, and it is only by the presence of the ideal element that the profoundest truth can be obtained.

No writer can reproduce the whole of human existence or more than a very limited part of it within the brief compass of a drama or story. To give us a representation of life, all that a writer can do is either to copy a small bit of it with minute and painstaking fidelity, to tear out a leaf or two from the book of human life, so that we shall have it line for line and letter for letter—and this is the method of realistic fiction; or, instead of a fac-simile of a portion of human experience, he may try to make his work a representation on a small scale of what he conceives to be its significance as a whole, or at least of the hidden moral meaning of some phase or section of it. From the innumerable phenomena in their confusion and complexity of aspect as they appear to the ordinary observer, he can pick out a limited number of characters and incidents, giving relief to some, throwing others into the shade or rejecting them as mere surplusage, and group, arrange, order what is left, so as to convey to the reader some idea of the unity, the harmony, the moral significance of the whole. And this obviously is a task which, though it admits of infinite varieties of excellence, implies in order to its worthy fulfilment, powers of the very highest order, a mind that is not merely observant but creative or poetic, —a capacity, in other words, not simply of reflecting what lies on the surface, but of seeing under it and getting at the heart of life's mystery—a capacity of

taking up the scattered materials of experience and fusing them in the fire of imagination into a new organic whole, every element in which is full of significance.

It is true that realism often implies no common gifts. It needs powers of observation and graphic delineation, such as few possess, to produce a vivid picture of even the superficial aspects of life. It is no despicable talent which enables a man to catch up and arrest the evanescent, fugitive play of light and shade on the surface of society, to reflect in fixed colours the light flow and ripple of its follies, its vanities, its absurdities, or to portray without exaggeration its vulgarity, its meanness, its baseness. Yet with all the talent displayed in popular realistic fiction of the last and present centuries, it may be questioned whether the result even at the best is one to which the honour of true art can be ascribed. Truthfulness and reality are great qualities in an artist, but the realism that copies the surface only is often more untrue to nature than the wildest vagaries of fancy. Verisimilitude that is faithful only to the outside is not seldom as deceptive as downright falsehood. The life of clubs and drawing rooms, of gossip, flirtation and match-making, of dining and dressing, of flippant talk and conventional manners —this, even among those whom it purports to represent, is not the true life of men and women, even the meanest of them. If it were, so far from laboriously

recording, it were better for us in shame and sorrow to ignore or forget it. And the same is true of the realistic novel of low life. The literalism, however clever, is surely unprofitable, which invites us to occupy time and thought with minute and wearisome details of the dress, the surroundings, the food, the manner of speech, of the dwellers in London back lanes and hovels—with the slang of costermongers and the chaff of omnibus-drivers, with inventories of the furniture of the tap-room or of the articles on the shelves of the pawnbroker's shop.

In contrast with this crude realism, it is the function of the true artist so to represent life as to enable us to penetrate beneath its superficial aspects, and to perceive the grandeur that is hid under its apparent meanness, the good that lies at the basis of its seeming evil. Life is not really for any of us the poor, bare, barren thing it often seems. A treasure of beauty and joy of which we often wot not lies scattered about our daily path. Its dulness, its monotony and lack of interest, arise only from ignorance of the deeper forces that are at work underneath it. Its hardness and unloveliness are but the veil of a strange beauty which is ever ready to be revealed. It needs but the insight of the master-mind to see, and the touch of the master-hand to disclose, the wonder and greatness that are often latent in its homeliest details—all the passion and the power, the pathos and tenderness, the often

more than tragic interest with which our common life is replete. Materials for art, subjects for song or story, if he can but detect and disentangle them, lie ready to the true artist's hand. Under a thousand varieties of forms and circumstance the essential greatness, the boundless possibilities of man's nature, the obstacles which resist and the strength of will which makes him master of his destiny, the struggle of duty with necessity, the collisions and conflicts, the play and strife of the great normal passions by which character and happiness are made or marred, the unsounded depths of sorrow and joy which human hearts contain, the golden threads of love and charity and truth and tenderness that are woven into every human life, and the sweet wonders of the common earth and skies which encompass it—these things constitute the materials which make human life an inexhaustible field for the sympathetic insight and inventive power of art.

So long as man's life is what it is, the strange story of "a being breathing thoughtful breath, a traveller 'twixt life and death," so long as, in innumerable ever-varied aspects, the moral elements of love and sorrow and hope and disappointment, of short-lived raptures and enduring cares, of temptations issuing in the strength of conquest or the weakness of discomfiture —the wondrous medley of greatness and littleness, of things mundane and things celestial, of contrasts that

move, now our laughter at their incongruity, now our terror at their awfulness—in one word, the strange swift course run out beneath the silent heavens, with the shadow of the awful future creeping ever more near till we are lost in its impenetrable mystery—so long as life contains such elements, the mind that can strip away the mask of accident that conceals them and by the power of genius vividly reflect them, will find in it scope for the grandest efforts of imagination, and such minds will be numbered among the wisest teachers of mankind.

THE PROGRESSIVENESS OF ART.

November 5, 1887.

LAST year, partly to draw attention to a gap in our educational system, and also because of the interest of the subject in itself, I offered you some remarks on the study of art, and in particular on the question whether and how far it can be made a branch of academic culture. I shall not waste time by recapitulation; but the subject is too wide to be exhausted in a single lecture, and there is one aspect of it on which many years ago I had occasion to touch, and which I think sufficiently important and interesting to recur to as a sequel to last year's lecture.

The history of knowledge is, on the whole, a history of progress. This characteristic is obviously true of the physical sciences, in which we see at a glance that modern times are at an almost incalculable distance in advance of ancient; and there are obvious reasons on which we may base the conviction that the progress of these sciences will be still greater and more

rapid in the future. But is there not some ground for maintaining that, in some branches of literature and in almost all that belongs to the province of art, a point of excellence was reached in past ages which has never been transcended, and that here all that is left for modern times is only the attitude of reverent study and admiration, the humbler task of imitating those exquisite works of the genius of antiquity which we can never hope to excel? Moreover, if we reflect on the conditions by which progress is determined, may it not be argued that science and art stand on altogether different grounds? The causes which conduce to the progressive advancement of the former do not apply to the latter, and it might even, with some show of reason, be maintained that the growth of scientific knowledge constitutes a hindrance to artistic originality and productiveness, so that as science advances art must necessarily decline. How far, let us ask, is this contrast true, and what are the lessons which, as students in both these provinces of human thought, we may gather from it?

I. In the first place, it is obvious that in art (and under this general term I include not only what are ordinarily meant by the fine arts, but also that which may be regarded as the highest of them, poetry) attainment depends much more on individual ability and genius than in science. A modern man of science may not be of greater mental power than many of its earlier

pioneers, but he is immeasurably in advance of the latter in a sense in which we cannot say that a modern poet or sculptor is in advance of Homer or Pindar, of Phidias or Praxiteles. In those departments of human attainment in which observation and experiment are the instruments of knowledge, or again in those which, though they do not advance by the mere accretion or accumulation of facts and results, have in them a principle of development by which each successive age absorbs and uses up the thought of the past, it is plain that, with the same ability, the modern enquirer has immense advantages over the investigator of bygone times. Every real contribution which any past observer or thinker has made to science is, to him who begins now to labour in the same field, not only a ready-made part of knowledge, but a means of further discovery. Even a student of ordinary ability and diligence may in a few years make himself master of the best results of the life-long labours of those who have contributed to the marvellous progress of physical science since the close of the sixteenth century.

Nor does it need any great or exceptive powers of mind, any genius akin to that of the Keplers, Galileos, Newtons, of past times, to be able to advance beyond their point of knowledge and to carry on the march of discovery into regions which it was not given to them to penetrate. For every new fact, every fresh applica-

tion of a principle or law, is a distinct addition to the existing body of knowledge; and so science progresses not merely by the intellectual activity of the highest minds, but by the patient toil of those who can only furnish materials for fresh induction or work out applications of ascertained principles. In science it is not men of genius only who are capable of doing anything; laborious mediocrity has here also its most useful part to play, and even the veriest intellectual day-labourers —the hewers of wood and drawers of water—may do something to help on the common work.

Moreover, from the same cause it arises that the work of many of the greatest contributors to science speedily loses any other than an historical interest. However valuable what they did in their own day, their methods of investigation are no longer followed, their books are not read, the precise results of their researches are not attended to in ours. All that is of permanent value in them is to be found in a more accurate, or at least in a more easily understood form, in our modern scientific manuals, and the ordinary student has no need to go back to the works of the original discoverers.

But if we turn to that department of human activity which is embraced under the general designation of art, it is obvious that the conditions of progress, if here there be any such thing, are altogether different. The achievements of the painters, sculptors, poets of

the past are not handed on to their successors like those of the men of science, so as to make it certain that each succeeding age shall be in advance of all that went before. Here what a man does depends comparatively little on what others have done before him, but mainly on the quality and temper of his own mind. It is true that, as time progresses, there may be a greater command of the accessories of art, and also that the works of the great masters, as they increase in number, furnish more examples to kindle the artistic enthusiasm, and to guide the efforts of later generations. To get his ideas conveyed to us, the painter uses the language of lines and colours, the poet of melodious words, and the traditions of their craft may do something to perfect both in the use of the organs of expression they employ. But the chief element in the perfection of a work of art lies in that which is deeper than expression,—the creative faculty, the ineffable gift of genius. It lies in that intuitive insight into the life of nature and man, that strange susceptibility to what is noble and tender and beautiful, which touches and thrills us in the works of the great masters of art and song.

Now, this is an element which cannot be transmitted or handed down. It is independent of tradition and education, it comes as an inspiration on elected souls fresh from the eternal fount of light, and the men of later times have no nearer or freer access to it than

those of ages the most remote. As the world grows older, and the arts can look back on a longer history, it becomes, indeed, easier for minds of average ability by dint of culture to get up the external accessories of art, to mimic the voice, the tone, the manner, the forms of expression, which, once peculiar to genius, are now the stock conventions of the poet's or painter's craft. By laborious study of models and of varieties of style and treatment, the clever art-aspirant may gain a specious facility of execution, and so qualify himself to produce manufactured articles that impose on the unpractised, and pass with many for the genuine fruit of inspiration; or he may so steep himself in the atmosphere of some great master as to catch the trick of his manner, and produce on undiscerning minds an impression in some faint measure akin to his.

It is one result again of the varied literary culture of our time to render it easier for talent and cleverness to write well, to write with a seeming flow of ideas and facility of language which at an earlier time would have been to the mass of clever bookmakers an altogether impossible achievement. The stage properties of literary art have gone on accumulating for many ages, and are now accessible to all. Not only the machinery of versification, the knack of an ingenious and pleasing arrangement of melodious syllables, but a vast repertory of poetical effects, choice words, happy epithets, graceful images, metaphors, similes from every

realm of nature has so accumulated that a competent literary artizan, endowed with a retentive memory, a cultivated taste, and a light and facile touch, may easily throw off lyrics, sonnets, epics, dramas by the dozen—electroplate productions so closely resembling the real metal that very many purchasers never know the difference.

But how little this increased facility of production is any sign of real progress in art is made evident by the fact that, though a great poet or painter may, as in well-known instances, have a most perfect mastery of the medium of expression, yet the soul of art may shine through the rudest and most imperfect forms, and that with an ineffable force and fervour which at once eclipses the borrowed light of laborious culture. A few rude scratches from the pencil of genius, a note or two struck from the lyre by a hand all innocent of artificial culture, but in sympathy with the soul of nature, and vibrating in response to "the still sad music of humanity," may be instinct with a power and pathos, a capacity to charm and elevate and delight, which are the irrefragable tokens of a true inspiration.

From the same cause it follows that great works of art do not, like the works of many great scientific writers, become in course of time antiquated and obsolete. If science possesses a character of progressiveness which art cannot claim, those who labour in the realm of art have this compensation, that here

the results of individual effort have a permanence which is impossible in science. A great work of art has a value which is all its own, which is independent of any step it marks in the progress of art, and which, therefore, it never loses. So long as the material form lasts, men do not cease to admire and cherish it, and even in the most distant ages, amidst a thousand changes in the thought and life of the world, it remains, in and for itself, a cherished possession of mankind. Not less now than when the chisel of the Athenian sculptor gave the last touch to the Theseus of the Parthenon, or the groups of citizens gazed for the first time on the glorious procession of festive forms moving, leaping, dancing amidst garlands and song, to which the hand of genius had given immortal expression in the frieze that swept round the great Temple of the Acropolis—with not less admiration in this far-distant age, torn away though they be from their place, and little more than defaced fragments of the great originals, do thousands from all lands gaze on these monuments of ancient genius preserved for us in the great English repository of art.

And so, too, are not this and other schools of learning in this country bearing daily their silent testimony to the undying interest which the world retains in whatever survives to us of the treasures of ancient literature. Time has not antiquated the great classical writers of antiquity, nor the progress of knowledge rendered their

thoughts obsolete. Their ideas have indeed been assimilated by the minds and absorbed into the language and literature of succeeding ages, but not less do their works themselves, in their original form and shape, remain the subjects of our study and admiration. Our best intellects teach and comment on them. Our most skilled critics spend their lives in eliciting and setting in fresh light their beauty of thought and exquisite perfection of form. We are not satisfied to get their contents conveyed to us through the medium of our own language; for we feel that, in a work of art, thought and language, idea and form, so interpenetrate each other, the impression produced is a result of substance and expression so subtly interblended, that we have only an imperfect reflection of the great epic or tragic poem, or the ode or elegy, until we can know and experience for ourselves all the flow and rhythm of its verse, all the delicate point and precision of its expression, all the majestic pomp or the tender music of the language. As there are wines which, it is said, can only be drunk in the country where the vine grows, so the flavour and aroma of the best works of art are too delicate to bear importation into the speech of other lands and times; to appreciate them truly, we must breathe the very air and steep ourselves in the spirit of their own age and country, and receive them in the very form in which they were produced fresh and fragrant, on the soil to which they are indigenous.

II. We have seen, then, that in whatever sense progressiveness can be predicated of art, inasmuch as excellence in this department depends more than in any other on an original creative activity which knowledge and culture cannot produce, and the results of which are not, like those of scientific research, capable of being antiquated or absorbed by those of later times, the conditions which determine the advancement of science and philosophy do not apply to art.

But not only is art thus incapable of sharing in the progress of science; there are some considerations which might seem to favour the notion that the capacities which lead to progress in science are inimical to artistic excellence, so that as science advances art must necessarily decline. An age or period of the world's history which is marked by great scientific advances cannot, it may be held, from the very nature of the thing, be one of great artistic productiveness. As in the individual life, so in the intellectual life of the world, there is a period before reflexion and rational observation have been awakened, when the only explanations we can give of ourselves, and of the world around us, are those which imagination furnishes. If it be the function of art to idealize the world, the child is often an unconscious artist; for, out of the common matter-of-fact world of sense and sight, it creates a new and brighter world, or sheds around the real world an atmosphere in which

ordinary objects and appearances are transformed, refracted, recombined. To its eyes dead nature becomes animate with a life akin to our own, fanciful explanations are read into its phenomena, and a thousand dreams, stories, legends, are woven around its ever-changing forms and aspects.

So, it may be said, there is in the general history of human intelligence a stage analogous to this, which, like this, passes silently away when awakening reason dissipates the illusions and visionary interpretations of things in which the imagination runs riot. When that change has come, when the world has out-grown its intellectual immaturity, we may still of set purpose play with the illusory creations of imagination; but when scientific knowledge has obtained a firm hold of human intelligence, any other than rational explanations of nature and life can only be to ourselves a conscious imposture. The charm they once had for us is impossible when we must get ourselves into an attitude of make-believe in order to feel it. As the sport of idle hours they may be permitted to survive, but as a genuine form of human experience, the age of poetry and art is gone, never to be recalled.

Something like this is the view of the relations of art and science, and of the fatal influence of civilization and scientific progress on the production and enjoyment of works of art, which has been set forth with his usual rhetorical effectiveness by Lord Macaulay in

a well-known essay. "We think," says he, "that as civilization advances, poetry almost necessarily declines. Perhaps no person can be a poet, or even enjoy poetry, without a certain unsoundness of mind. By poetry we mean the art of employing words in such a manner as to produce an illusion on the imagination, the art of doing, by means of words, what the painter does by means of colours. Thus the greatest of poets has described it in lines which convey a just notion of his art:

> 'As imagination bodies forth
> The form of things unknown, the poet's pen
> Turns them to shapes, and gives to airy nothings
> A local habitation and a name.'

Truth," he goes on, "is indeed essential to poetry, but it is the truth of madness. The reasonings are just, but the premises are false. . . . Hence of all people children are the most imaginative. They abandon themselves without reserve to every illusion. Every image which is strongly presented to their mental eye produces on them the effect of reality. In a rude state of society men are children with a greater variety of ideas. It is therefore in such a state of society that we may expect to find the poetical temperament in its highest perfection. In an enlightened age there will be much intelligence, much science, much philosophy; abundance of verses, and even good ones, but little poetry."

The gist of this argument is that poetry and art produce their effects by an illusion, which advancing knowledge dissipates, and that they lose their hold over society when the scientific habit of mind, which rejects everything but exact knowledge and reality, has begun to predominate.

I cannot but think, however, that the argument partakes of that weakness which its author ascribes to art, viz., that its premise is false. True art does not produce its effects by illusion, and therefore the progress of science does not tend to subvert its power. The progress of science is fatal to folly, to superstition, to all kinds of false admiration and reverence—to the realm of falsehood and lies in general; but I do not think that in its furthest advances it will ever intrude a hostile step into the domain of imagination, or lay rude hands on a single fair creation which the true life of art has ever inspired. Nature and art, the world of sensuous existences in time and space, and the world of ideas which thought produces, cannot be contrasted as reality and unreality. The notion lurking in many minds is that the external objective world of earth and rocks, and streams and mountains, is a reality which God created, whilst the thoughts about it, even of the most brilliant minds, are mere human speculations and fancies, devoid of any claim to be called real substantial existences.

But if it be the divine creative power which entitles

anything to be called real, is there more of it in stones than in self-conscious thought? Have dead rocks and streams more of a divine presence and activity in them than the ideas of the intelligences which have been made in the divine likeness? The smallest original invention in the mechanical arts contains in it something which has never yet existed in the world of outward realities, and in that sense is unreal, a mere fiction of the brain. But even before it has been embodied in material shape, shall we say that lumps of iron or brass or zinc—inorganic matter, and the forces of material nature—out of which the machine is to be constructed, are realities, and the conception springing from the creative realm of thought, that is to infuse into them new power, and compel them into new relations, has as yet only an existence that is unreal and illusory? And when the matter-of-fact world of nature and of human life has yielded up its most precious content to furnish materials for the conception of genius, and they are reproduced on the canvas of Raphael or Perugino, or on the page of Homer or Dante, or Shakespeare or Goethe, in a form of living harmony and beauty, such as the eye of sense has never seen or can see, shall we say that a lump of clay or a block of stone is a reality, that the details of domestic life or the vulgar incidents which a daily newspaper chronicles, forgotten ere the eye has ceased to skim them, are true and real, and the noble crea-

tions of genius which live in our thoughts for ever are only empty phantoms which produce an impression of reality on us by a childish illusion?

But we may go further than this. So far from conceding that the creations of art are unreal, there is a sense in which it may be maintained that all great works of art are more real, certain, and express a deeper truth, than the matter-of-fact world for which exclusive reality is claimed. For truth or reality is not that which lies on the surface of things and can be perceived by every cursory observer. What meets the eye or is the object of immediate observation is but a chaos of accidental and transient phenomena, of facts and occurrences succeeding or crossing each other in endless complexity and multiplicity. To know the truth of things, to have cognizance of that which is real, we must penetrate beneath the surface, eliminate the accidental and irrelevant, and grasp the principle or essence which underlies and interprets appearances.

Now, whilst this hidden reality is unveiled to us in one way by science and philosophy, it is the function of art to reveal it to us in another and, for many minds, a more expressive and intelligible way. Art does not analyze, or abstract, or classify, or generalize; it does not lay bare the mechanism of thought, or evolve by the process of a rigid dialectic the secret order and system of nature and history. But the idea which, gazing on nature and human life, by the

intuitive force of imagination the great artist has divined, he incarnates anew in sensible forms and images, borrowed indeed from the actual world, but closer to thought, more speaking and significant, more true than nature and life itself. For there is a sense in which it may be said that nature speaks her own meaning with an indistinct and faltering voice, and needs some inspired interpreter to make music of her stammering accents. And though our common life is replete with spiritual significance, yet its pathos, its beauty, its harmony, the secret rhythm that runs through it, and the more than tragic interest that underlies it, are but too often obscured and lost amidst the perplexing confusion of its accidents and the triviality of its meaningless details. Now it is the mission of art to speak, indeed, in nature's language, but to lend to her a voice more clear and articulate than her own; to represent human life, but to represent it in such a way that through the forms of the ideal world, the obscured plot of the real world shall unfold itself in its true significance and grandeur.

III. I can only refer, lastly, in briefest form, to one other consideration derived from the very nature of art which has been urged in proof of its unprogressive character. If there ever was a time when art could be a religion, drawing into its own sphere all the force of the religious element of man's nature, must not that, of necessity, have been the time when art reached its

culminating point? Can we conceive of a period of human development at which religion is the worship of the beautiful, when our deepest thoughts about ourselves, about nature, about things invisible and spiritual, our highest hopes, our loftiest admirations, our most exalted reverences, could all find adequate expression in the beautiful forms of sense? There may be in man's nature that which transcends the capabilities of expression contained in sensuous form; ideas, emotions, experiences, which matter, however moulded, can only obscurely symbolize, or which, from their very nature, are at war with and make havoc of material grace and beauty. When the human consciousness has become receptive of these higher experiences, it is indeed, it may be granted, at a more advanced stage of its spiritual career; but is it not one of the penalties of such advancement that it has left behind it for ever that bright and sunny region where it could make a home of art? In the year's course, the fruit season may be the most valuable, but when it has come, the time of gay-tinted blossoms has passed away.

On the other hand, can we conceive the race as having just reached and not yet passed the point at which the mind has indeed awakened to a sense of inward freedom, when it has fermenting in it a thousand thoughts, desires, ambitions, such as lend its joyous fervour and hopefulness to the heart of youth, but has as yet never turned inward to brood over itself, or felt

the shadow of spiritual doubt and conflict creeping over and marring its light-hearted enjoyment of the bright world without? In one word, can we go back in thought to a time when man's highest ideal neither fell below nor yet surpassed what lovely forms of human grace and nobleness, only with the stain of human imperfection removed from them, could perfectly express; and therefore a time in which the æsthetic and religious elements were inextricably interwoven, and man's deepest spiritual susceptibilities could find vent in the worship of the beautiful? Then must not such a time have been, beyond all others, in the history of our race, that whose conditions were most favourable to the perfection of art?

Now it is precisely such a stage of human development which was realized at a definite historic period in the life of ancient Greece. There, for once in man's history, art and religion were all but identified. Greek religion was the worship of the beautiful. In the conceptions of its poets, in the creations of its sculptors, in its beautiful temples and shrines, it is nearly impossible to discriminate between the æsthetic and the sacred, the poetical and the mythological. It is the poets and artists of Greece who are at the same time its prophets, the creators of its divinities, and the revealers of its theological beliefs; and that conception of the divine which the genius of Homer and Hesiod originated, found its perfect embodiment in those sculp-

tured types of human beauty and nobleness in which the spiritual motive and the exquisite finite form were indistinguishably united. Greek thought had reached but not passed beyond the stage at which its highest ideal could find adequate expression in sensuous form, and especially in that individual human form in which soul and sense are most closely implicated. No mystic dreams of an ascetic piety had come to trouble the tranquillity of its humanistic devotion. No sense of humiliation before an infinite standard of right had darkened the bright horizon of the present and the finite. The spectral form of an awful fate dominating all things human and divine might lurk in the background, but it did not obtrude itself or mar the fairness and completeness of that seemly human life in which the spirit found satisfaction and rest. Sin and sorrow and pain, the hidden overruling presence of inexorable moral powers working out in the predestined doom of mortals the solution of moral conflicts, might constitute the main motive of Greek tragedy; but it never interfered with that air of victorious serenity which art imprinted on brow and face and form of its beautiful humanized divinities.

Thus the Hellenic ideal was simply that of finite completeness, of a finite consciousness in harmony with itself and the world. And for the expression of that ideal the resources of art were quite sufficient; in representing it, art had its congenial function.

A felicity untroubled by internal struggles or outward infirmities, a self-complacent repose superior to accidents and ills, a serene fairness unmoved by passion, or want, or care—what was there in all that that could not be fitly and fully expressed by external sensuous symmetry and fairness? And so, as the modern artist contemplates those antique forms in which Greek plastic art embodied its ideal of the divine, as he notes the free and bold yet delicate modelling of shape and outline, the charm of rounded fairness and unworn strength in feature and limb, the delicate gradation of curves that melt into each other by insensible transitions, the poise and dignity of attitude, the suppression or the subtle hinting of minor details, and finally, the exquisite art that can suggest, in its colourless purity, a nature free from the vulgarizing taint of passion, or from those sad experiences that grave their record deep on mortal face and form—what wonder that he should declare, to use the words of one of the most famous of the sculptors of our day, that to surpass the best works of the Greeks is a hopeless task, to approach them a triumph?

But now, admitting the force of this argument, granting that the Greek of a definite historic age was endowed with a genius for art, which, in one point of view, has never been surpassed, the answer which I can now only indicate is simply this, that art has not exhausted its resources of expression when

it has told all that the perfect loveliness of corporeal form can express. There are secrets of the human heart, there is a whole world of moral and spiritual ideas, which lie beyond the range of the one art—that of sculpturesque beauty, in which the excellence of Greek genius is undisputed. Through the rent veil of mortal flesh a diviner light has streamed on Christian thought than when it was only a seamless garment which the spirit wore. The art that can leave behind it the superficial serenity that ignores or defies pain and sorrow and unrest, to grasp the ideal of a purity that has been won by struggle and conquest, and a peace that has known and triumphed over temptation and evil, is surely nobler far. Even in the one art of sculpture, the perfection which Greek genius achieved, however admirable, is but a limited perfection. It could print the idealized likeness of sensuous bliss on many a fair and stately brow; but if hidden springs of joy deeper than pagan thought knew have been opened up to the heart of man, if the radiance of a loftier hope, the light of a deeper, diviner blessedness, has kindled on many a human face since pagan art passed away, surely to the art that has *that* to portray grander possibilities of excellence have been afforded:

> "Shall man, such step within his endeavour,
> Man's face, have no more play and action
> Than joy which is crystallized for ever,
> Or grief, an eternal petrification?"

And if we turn to that which, in one point of view, may be regarded as the highest of all arts, poetry, surely the deeper, fuller, more various, more complex life of the new world supplies materials for the creative imagination to work on richer far than the old world possessed. A religion which strips human life of its completeness, which accentuates the spiritual in contrast with the material, and turns from the pomp and glory of the present and visible life to gaze with eager, trembling hope and aspiration on the future and invisible, can no longer identify itself with art. For the very reason that its ideas transcend the highest existing forms of art, they infuse into these forms a deeper interest and significance. A richer, deeper tone is breathed into lyric song when it is no longer the light effusion of sprightly feeling or sensuous desire, but the utterance of a heart whose most transient emotions are touched by the pathos of an infinite destiny. And if the interest of the game becomes more absorbing when the stakes are incalculably increased, surely the materials which human life now supplies to the dramatic poet give him a power to move our pity and our terror, such as ancient tragic art in the period of its greatest splendour did not and could not possess. All the passions, situations, characters, collisions, out of which genius weaves the great work of dramatic art, are replete with richer possibilities, now that on the stage of

life is thrown back the reflexion of the awful mysteries of the world unseen. Love has caught a new touch of passionate tenderness, courage, fidelity, generosity, honour, self-sacrifice, the glow of a loftier heroism; hate and fear, and remorse and crime, have in them the capacity of stirring in us a horror of moral repugnance such as pagan art has no means of awakening; and the ideas of man's spiritual worth and immortal destiny offer to the imagination that can comprehend them, contrasts which the most daring invention of an earlier time could not have surpassed—contrasts of greatness and littleness, of weakness and nobleness, of inward essence and outward circumstance, of things infinite and eternal, hustled in the crowd by things of the passing hour—contrasts which move now our laughter at their incongruity, now our terror at their awfulness.

The conclusion, then, to which these reflections lead us is, that there is nothing in the nature of art to exempt it from that character of progressiveness which, as we have seen, belongs to science and philosophy, and in general to all spheres of intellectual activity. Art is but one of the ways in which the thought and culture, the spirit of an age expresses itself. It is, in one sense, the depository of its richest intuitions, its deepest reflexions, its purest aspirations. If man progresses, therefore, art must progress.

But though this be so, there is one great advantage attendant on the study of the productions of ancient art, and especially on the study of the poets, orators, historians of classical antiquity, viz., that they furnish models of a kind of perfection which in modern times we cannot hope to surpass. The ideal of modern art may be far in advance of ancient, but in point of literary form, in precision, purity and beauty of expression, no modern literature can cope with the best literature of ancient times. It may be that, from their structure and genius, the Greek and Latin languages lent themselves to greater perfection of form than is possible for our own or any other modern tongue. But, apart from that, the exigencies of modern life lower, necessarily, our standard of excellence, and render us less fastidious. We write and speak more, and therefore we write and speak worse, at least in style and manner, than the great authors and orators of the past. Not to speak of the host of smaller men whose poor thoughts clothe themselves on the platform and through the press in poorer words, no one can read the speeches of even our foremost statesmen, or the novels, poems, essays, articles that pour forth with such rapidity from the pens of our most notable writers, without being constrained to admit that, in comparison with the great orators and authors of the past, we have fallen on degenerate times. "They had more time to write,"

says Mr. Mill, "and they wrote chiefly for a select class. To us, who write in a hurry for people who read in a hurry, the attempt to give an equal degree of finish would be loss of time." But it will be no loss of time for those to whom, by reason either of their special vocation in life, or of their general position and exigencies as educated men, the capacity to speak and write well will in future years be an invaluable endowment—it will be no loss to them to become familiar by patient study with those unapproachable models of the art of expression which are supplied to us by the literature of ancient times.

THE ART OF PUBLIC SPEAKING.

November 9, 1889.

As on former occasions, I deem it expedient to defer till the close of the session any reference to the incidents and details of our academic life, and to make use of the present opportunity to bring before you some subject of a more general character, connected with the studies of this place. I might indeed be tempted to deviate from this custom by the remarkable changes that have recently taken place in our professorial staff. It is often only when we have lost them that we learn fully to appreciate the value of our possessions, and I know that I should carry with me the sympathy of both professors and students in giving expression to the universal feeling of regret for the loss which the University has sustained by the resignation of three of her most valued teachers.[1] The subject, however, is one which deserves more than the brief reference I could make to it on the present

[1] Professors Nichol, Jebb, and James Thomson.

occasion, and other opportunities will arise for dealing with it. Even now, however, it would not be well to pass by, without more special notice, another gap in the number of our teachers which has been created by the hand of death. Owing to the comparatively limited and technical nature of the subject he taught, Professor Roberton was not brought into contact with the general body of students, but his clear and vigorous intelligence, his exact and comprehensive knowledge, his great experience and his powers of lucid exposition, made him a most useful and successful teacher; and beyond his own particular department, his great social influence and his strong academic sympathies enabled him to render many remarkable services to the University. On the minds of his colleagues and of those who were honoured by his friendship he has left the impression of a singularly clever, vivacious nature, of a mind enriched by varied culture and by stores of historical and other knowledge held firm in the grasp of a tenacious memory, and ready to be poured forth on all fitting occasions; and lastly, of a disposition and temperament of unfailing geniality and kindliness. He was a man who never made an enemy, and whom it was impossible to know without liking.

I now turn to the special subject of my lecture. The interest that has been excited during the last few months on behalf of the Students' Union, which is to be in future the home of the Dialectic and kindred

societies, has drawn my attention to the fact that such societies afford the only direct discipline in an art which plays a large part in more than one of what are called the "learned professions," and in modern civic and political life. I should like therefore to-day to offer you a few remarks on the art of public speaking and debate, and on the best ways of acquiring proficiency in it.

Of all intellectual agencies, the faculty of public speaking is perhaps that which, in proportion to its practical influence and importance, has received the least attention in our educational system. Of course, seeing that the first condition of good speaking is that the speaker should have something to say, indirectly all education is an education of the orator. External gifts of voice and manner, apart from more solid acquirements, may deceive and dazzle the unwary and make a slender stock of ideas go a long way with an uneducated or half-educated auditory. But such superficial qualities in the long run lose their effect, even on uncritical ears, and to the better instructed may even become offensive as a kind of tacit insult to their judgment. Knowledge and a disciplined intelligence therefore constitute the first condition of effective speaking. But if it be true, as we must all admit, that the possession of knowledge does not imply the power of imparting it, that profound thinkers and ripe scholars may be poor and ineffective speakers; if ex-

perience proves that men who are strong in the study may be weak on the platform or in the pulpit, and that even men whose books evince a masterly grasp of their subject may be distanced as teachers or preachers or public speakers by persons of greatly inferior gifts and attainments,—then it is obvious that something more than the possession of ideas goes to the making of the orator, and that that system of education is incomplete which confines itself to the acquirement of knowledge and neglects the art of oral expression.

Every one knows of the immense pains that were bestowed on the cultivation of this art in ancient times. "Ancient oratory," writes Professor Jebb, "is a fine art, an art regarded by its cultivators as analogous to sculpture, to poetry, to music." Already before the art of rhetoric had become an elaborate system, the orators were accustomed to prepare themselves for their task, first in composition, then in delivery. "Great is the labour of oratory," says Cicero, "as is its field, its dignity, its reward." And though it may be true that in this as in other arts, nature and original aptitude count for much, and the highest eminence is attainable by few, yet moderate success is not beyond the reach of average ability industriously and carefully cultivated. How then shall we explain the comparative neglect into which in our modern educational system this art has fallen; how shall we account for the fact that whilst every

other art has its principles and methods, its long and laborious discipline, its assiduous study of the best models, the acquisition of this art is for the most part left to chance or to such proficiency as can be gained in course of time and at the expense of long-suffering audiences? How is it that in our schools and colleges everything is done for the attainment of knowledge, and nothing at all for the capacity of communicating it?

At first sight we might suppose that this neglect is to be ascribed to the diffusion of literature and the growing influence of the press. Oral teaching, we might naturally suppose, would count for more in times when there was almost no other access to the popular mind, and, with the spread of education and the multiplication of books, would gradually be superseded by instruction conveyed in a literary form. That the gift of eloquence should be rated high, and should be sedulously cultivated in an age before books existed in printed form, or when books were few and costly and readers a very limited class, and when for the great mass of men the preacher or public speaker was in himself all that books, newpapers, magazines, pamphlets, popular manuals, organs of political parties and religious sects, the vast and varied mass of publications that are constantly pouring forth from the press, are for us in the present day—that at such a period the faculty of oral address should be supremely

important is only what we might expect. But as education advances, and ideas in the more exact and permanent form of printed matter, suited to every variety of taste and intelligence, become almost universally accessible, we might also expect that the speaker's function, if it did not become extinct, would fall into the background; and also that, in so far as it survived, the improved taste of society would tend at once to diminish the quantity and to raise the quality of public speaking.

How groundless such expectations would prove you need not be told. The vocation of the speaker has not only lost nothing, but has enormously gained in public consequence with the gradual diffusion of knowledge in printed form. There never was a time, in modern history at least, when it constituted so potent a factor in the national life as in our own day. There never was a time when the gift of oratory or the talent for debate brought so much influence, social, political, ecclesiastical, or when he who was endowed with it found the power of ready utterance so much in demand. In this country at least the man who can speak is under a perpetual pressure to exercise his gifts. Lectures, platforms, public meetings, associations for all sorts of objects, festivals, banquets, ceremonials, conferences, anniversaries, meetings to offer testimonials to retiring, or to organize memorials to departed, officials and celebrities, great and small—

public occasions of all sorts, in short, create a perpetual call on his power of utterance. Nor is the demand confined to public occasions. The rage for oratory pursues him in his hours of relaxation and into the retreats of social and private life. In the pauses of a railway journey admiring auditors insist on a modicum of their favourite stimulant. At a private dinner or a garden party, the reporter, note-book in hand, is either openly or furtively introduced; and, sometimes it must be confessed not without his own connivance, opportunity is afforded to the oratorical celebrity to give the world another taste of his quality.

Moreover, it is to be observed, that, contrary to the natural anticipation I have just suggested, the public taste for oral qualification does not become more fastidious with the progress of education. Public speaking, with rare exceptions, does not in our day improve in quality. The palmy days of oratory, when it was regarded as an art on a level with painting and sculpture and poetry, when the severest canons of criticism were applied to it, when the great speaker cultivated his gift by laborious and varied discipline, speaking seldom, and only on occasions worthy of his powers, and grudging no pains to meet the claims of an exacting but appreciative audience—these days are long passed away. How could it be otherwise? An epicure could not expect a *chef* in the culinary art to send up, day after day, at a moment's notice a perpetual

series of *recherché* viands; and from even men of the highest abilities it would be too much to ask for the production of off-hand, extempore, oratorical feasts. Hence we need not wonder if, when we examine the speeches of even the most renowned purveyors of modern oratory, political and other, we should find that in the best qualities of eloquence, in clearness of thought, precision of aim, consecution of argument, force, aptitude and elegance of expression, they fall miserably short of the best types of ancient oratory; and that loose, slip-shod and ambiguous phraseology, involved and interminable sentences, sounding but empty declamation, perplexed and inconclusive argument, and the cheap impressiveness of appeals to vulgar prejudice and passion, should be their too common characteristics.

There are, however, some considerations which may serve to abate the severity of the censure we pass on these and other defects of modern oratory. Much, of course, depends on our canons of criticism. We must consider how far the blemishes on which we animadvert arise, not from the incapacity or carelessness of the artist, but from the necessary limits and conditions of his art. It is obvious, for one thing, that we cannot apply the same standard, either as to matter or form, to written and spoken prose composition. It is even possible that the speaker who should aim at literary excellence would be going on a false quest, and that

the qualities which made his work good as literature would mar or vitiate it as oratory. A reported speech, indeed, becomes literature, but it is not to be judged of as such, but as a composition primarily addressed to the ear, and producing its effect, whether instruction or persuasion, whether intelligent conviction or emotion and action, under the condition of being rapidly spoken and rapidly apprehended. And this condition obviously implies that many qualities which are meritorious in a book or treatise—profundity or subtlety of thought, closeness and consecution of argument, elaborate refinement and beauty of style, expression nicely adapted to the most delicate shades of thought,—would not only involve a waste of labour in a spoken address, but might mar or frustrate its effectiveness. A realistic painter who bestows infinite pains in copying the form and colour of every pebble on the bank of brook or stream, and every reticulation of each leaf on the spray that overhangs it, not only squanders effort in achieving microscopic accuracy, but distracts by irrelevant detail the eye of the observer, and destroys the general idea or impression of the landscape. And a like result may attend elaboration of thought and fastidious nicety of form in a spoken composition. Such minute finish is either lost and unappreciated by the auditor, or, while he pauses to admire it, his attention is diverted, and he loses the thread of the discourse or argument.

Moreover, in studying a written composition, a reader has no right to complain of compression or conciseness, or, on the other hand, of the space occupied in the development of the thought. If the sense be not immediately obvious, or if he fails to catch it on a first reading, he can pause on a phrase or sentence, he can go back on a paragraph; if the matter sets his own mind a-working in a different track, he can suspend his reading to follow out the suggested train of thought, and then come back to take up the interrupted sequence of the author's argument; or again, if the strain on his attention or intelligence becomes too great, he can stop and resume his reading at will.

But an oral address admits of no such delays and interruptions. The meaning must be understood at a first hearing or not at all, the discourse must be so framed that the mind of the hearer can move on at least as fast as that of the speaker; and seeing you cannot, on many occasions at any rate, shut up a speaker as you can a book, there are limits of length to which every public address must conform. Obviously, therefore, oral composition not only admits, but requires, certain characteristics which would be not only illegitimate, but positive blemishes in matter intended to be read. Hearers, of course, vary in quickness of apprehension, and no speaker is bound to be plain to auditors whose intelligence must be supple-

mented by a surgical operation. But though it is true that greater condensation is possible in addressing a select audience, an average audience cannot be fed with intellectual pemmican. To present the same thought in varied language or in diversified aspects, to make use of pictorial forms and abundant and familiar illustrations, to go at a slow pace in argument, to avoid rapid transitions and elliptical reasoning, to arrest wavering attention at the cost even of irrelevancy and digression, to be not over-scrupulous as to grammatical and dialectic proprieties or telling roughnesses that jar on a fastidious ear, to make sure not merely that the ideas are there, but that they are so presented as to interest, strike, sustain the attention, and tell on the heart and soul of the hearers—these and such as these must be aims present to the mind of the public speaker and controlling the form and substance of his talk. But all this implies that a certain latitude must be conceded to oral, which is denied to written composition, and that the very effectiveness and success of a speech may be due to its offences against the strict canons of literary criticism.

It is on this principle we explain the fact that good speakers are often bad writers, good writers bad speakers, and that the instances are rare in which men attain to great and equal excellence as authors and as orators.

Following out a little further this comparison of speaking and writing, or of oral and written prose composition, there is another characteristic by reason of which, at first sight at least, we must ascribe an inferior value to the former, viz., its evanescence. Written or printed matter has the advantage not only of greater precision but of greater permanence. A great book is a treasure for all time. The thinker passes away, but the thoughts that are enshrined in the literature of the past live on for the instruction and delight of succeeding generations. It is of the very essence of oratory, on the other hand, to be ephemeral. Its most brilliant effects, like the finest aspects of nature, vanish in the very moment of observation. They can no more be arrested than the light of morning on the mountain summit, or the flashing radiance on the river's rippling waves, "a moment here, then gone for ever." The words that touch us by their pathos, or rouse us by their lofty eloquence, pass away like the successive notes of a song in the very act of falling on the enraptured ear.

It may even be said that the best and noblest effects of oratory are more evanescent than those of music. The song may be sung, the great composer's work that delights us at a first hearing may be repeated with equal or higher artistic skill. But often the power of spoken words depends on a combination of circumstances that can never be reproduced. The

speech of a great statesman in debate—say on some critical emergency when the vote is about to be taken that is to decide the fate of a ministry, or the passing of a measure of reform or of domestic or foreign policy on which the interests of millions are staked; or again, the speech spoken by an illustrious pleader in a great state trial, and before an audience composed of all the elements, social and intellectual, that stimulate to their very highest an orator's powers; or, to name no other instance, the words in which one who knows how to sympathize with and touch the hidden springs of human emotion, gives expression to the sorrow of a community for departed greatness, or the proud reaction with which it rises to face some national calamity or peril—in these and many similar instances the conditions of a great speech, and therefore the speech itself, can never recur. A song may be sung again by the same or other voice, but the speech can never be re-spoken even by the voice that uttered it; and that not merely because, under the inspiration of a great occasion, it may have reached the climax of its powers, but because the moving panorama of history never repeats itself, never revives again the circumstances that gave it its power to affect us. And when the eloquent voice has itself been silenced, unlike the song, no other voice can reproduce its music. On the lips of Æschines it may seem still instinct with power, but all his art cannot make

us feel as we should have done, had we heard Demosthenes.

But if we reflect for a moment on this distinction between oral and written composition, may not the very fact of the evanescence of the former suggest to us that there is in good oratory an element of power which written or printed matter does not and cannot possess. Society will never, by reason of advancing culture and the diffusion of literature, outgrow the relish and demand for good speaking, for this, if for no other reason, that, besides outward circumstances and accessories, there is something in what we call eloquent speech which by no effort or artifice can be reproduced in literary form. Without analyzing the process every one knows and feels it to be so. The disappointment and revulsion of feeling, for instance, with which, after listening to some great display of oratorical power, we read the verbatim report of what has so strangely stirred us, shows that, whatever it be, an element of mental influence was called into play by the living voice which has vanished when we are no longer under its spell.

A still more conclusive proof of this is to be found in the difficulty we often experience of accounting for the recorded influence of speeches or sermons on the auditory to whom they were addressed. A little seems to go a long way in public speaking.

We hear of audiences being moved to laughter or melted to tears by words which, as we read them, scarce excite in our minds a ripple of emotion. The reported witticism, or joke, or sarcastic allusion which called forth irrepressible signs of amusement in the crowded meeting, seems to the reader but a poor play of words, scarce deserving of a smile. The appeal which, we are told, was so effective, the simile or illustration which was so rapturously applauded, the invective that was so terrible to listen to, the burst of lofty eloquence that made a whole congregation hold their breaths, seem, as with unquickened pulse we read them on the printed page, marvellously inadequate to the effects they produced. There are, as has been remarked, scarcely any of the speeches of the great Parliamentary orators of the last century—Chatham, Pitt, Fox, Sheridan, and others—which have come down to us, that seem to justify their renown.

And as to pulpit orators, not to speak of the great French preachers, the marvellous effects of whose somewhat theatrical eloquence must in great part be ascribed to the peculiar genius of the French nation, any of you who have read of the effects of the preaching of Whitfield, or Kirwan, or others nearer our own day —how, for instance, men so unemotional as Franklin emptied their purses and women divested themselves of their jewels under the irresistible influence of one preacher's appeal at the close of a charity sermon;

how the sobs and expressions of emotion rendered another preacher's voice inaudible at one point of his sermon; and how, as the peroration of a third rang on their ears, the whole audience, as if moved by a simultaneous electric shock, sprang to their feet—I daresay some present will corroborate my own experience when I say that when, after reading of such incidents, I have turned to the sermons which gave rise to them, if not compelled in honesty to pronounce the thought poor and jejune, the pathos forced, the declamation extravagant, I have found myself either irresponsive or but faintly responsive to the eloquence to which such effects are ascribed.

Shall we say then that these effects are due simply to illusion? Objects look larger than reality in a particular state of the atmosphere; is there a similar deceptive intellectual atmosphere in a crowd, so that small ideas look big, and feeble jocularities affect us as brilliant flashes of wit? To say this would only be an explanation to the ear; it would be to substitute a re-statement for an explanation of the problem. Or are we to ascribe the result in question to that which undoubtedly differentiates spoken from written words, the added charm of voice, manner, delivery?

No doubt much of the effectiveness of public speaking is due to these accessories. We can scarcely over-rate the power which a good or bad manner has to help or hinder oratorical success. There are many men of

good parts so heavily handicapped in this respect by nature that, however excellent the matter of their talk, it is scarcely possible to listen to them with patience. It would, of course, be invidious to mention names, but we have all known men who can write sensibly or, at any rate, inoffensively, yet to listen to whose speeches or sermons for any length of time is a terrible infliction. A harsh, rasping, unmodulated voice, every note of which grates on the sensitive ear like the sharpening of a saw, or a monotonous sing-song, rising and falling with a uniform cadence, wholly irrespective of the matter, or a delivery flat, cold, colourless, or again loud and declamatory, full of exaggerated force, false emphasis and simulated fervour, and accompanied by floundering, ungraceful, vehement gesticulation—let an unfortunate speaker be weighted by these and similar accidents of manner, of which almost certainly he himself will be utterly unconscious, let him go on protracting his discourse from point to point to the utmost conventional limit, and I daresay there is no one here whose experience will not bear me out when I say that an hour or more of such oratory, whatever its substance, amounts to a kind of intellectual torture almost beyond human endurance. On the other hand, one could name speakers to whom, apart from their good matter, simply for the sweetness and melody of the voice, the rhythmical flow of the sentences, the refined yet unstudied grace of the manner, it is a

pleasure to listen. Even if you withdraw your attention from the sense, the sound falls on the ear with the charm of a summer brook or the melody of the Eolian harp.

But though the attractive qualities of voice and manner may partially account for the different effects of spoken and written words, that this is far from a complete and satisfactory explanation is, I think, proved by the fact that there are instances not a few, in which the nameless something that makes a man a great orator unmistakably asserts its presence despite of a manner characterized by almost every possible defect. To adduce but a single example. I think there never was a proof of the power of genuine eloquence to triumph over extrinsic defects of voice and manner so remarkable as that of our greatest modern Scottish preacher, Chalmers. Few if any here are old enough to have heard him, but if there be any one who has chanced to listen to one of his great sermons or speeches, I need not remind him how little the conventional graces of oratory contributed to their marvellous effect. No grandeur or dignity of person, no polish or refinement of speech or gesture, a voice without sweetness or melody, an articulation thick and guttural, an accent not merely broadly Scottish but of undisguised provincialism; instead of commanding and varied action aptly following the changeful turns of thought and feeling, a continual see-sawing of the air

with one hand, whilst the other followed the lines of the closely-read manuscript—such were the physical conditions which, in the case of this great orator, seemed to render anything approaching to eloquence impossible. Yet he broke through them all. To him these outward hindrances were but as withes and small cords, when under that inspiration, be it what it may, which gives a great speaker resistless sway over the souls of men. It was said that when Canning and Grey—men themselves not only of great intellectual power but remarkable for those accessories of voice and manner that can hold listening assemblies enthralled for hours—went to hear Chalmers in London, these old and practised parliamentary hands could not resist the magic power of his eloquence, and that, as the last words fell from his lips, Canning whispered to his neighbour, "The Scotsman beats us all."

But then the question recurs:—If the greater effectiveness of spoken than of written words can be set down neither to inexplicable illusion, nor, save partially, to the outward charm of voice and manner, to what shall we ascribe it? Perhaps the simplest account of the matter is to be found in this, that a book or printed page does not think or feel, but a good speaker does. Words, spoken or written, are only counters for thought; but in the one case they are but dead conventional signs, in the other they are signs animate, glowing, suffused with the spiritual life they represent.

Even if the signs were in the case of both author and speaker purely arbitrary, as employed by the latter they are accompanied and interpreted by the running commentary of emphasis, tone, modulation of voice, and by what we mean when we speak of "suiting the action to the word." The various expedients of the printer's art, stops, italics, marks of interrogation, sentences, paragraphs, parentheses, etc., are only cumbersome attempts to overtake by symbols submitted to the eye, what a good speaker, by the infinite flexibility and compass of the instrument he employs, can instantaneously suggest to the ear of his auditor. No printer's symbols can keep pace with the variations of thought and feeling which intuitively the living voice can express.

And besides this, there is this almost incalculable difference, that in the one case the symbols are arbitrary and artificial, in the other they are, for the most part, natural and instinctive. It is only by custom and education that we learn the arbitrary significance of words, and the verbal symbols of the same ideas are numberless as the varieties of human speech. But there is a universal language which, long ere we have mastered the meaning of articulate words, carries with it for each and all of us its own interpretation, and with the potent aid of which the most consummate linguist can never dispense. Betwixt parent and child in all lands and climes, the

light in the eye, the smile on the cheek, the tones of the voice, the thousand movements, touches, caresses of the enfolding arms, constitute a medium of communication intuitively understood, which not art but nature has taught. And this too is a language which we never outgrow, and which in the hands of one who knows how to use it, reinforces and in some measure transcends the capacities of oral address. The artifices of the printer, the notation of the musician, can no doubt do much to reduce this language of nature to formal expression. But even musical notation, though much more complete than any that could be adapted to speaking, leaves,—as any one knows who has ever listened to a great artist and compares his singing or playing with that of an inferior and common-place performer,—an almost boundless latitude of expression to individual taste and feeling.

And even more remarkable is this untaught and unteachable power in the case of the speaker. What ingenuity could invent a written or printed notation that would represent the infinite, nicely-discriminated, subtle shades of tone and accent which a great speaker instinctively employs, and which the ear and soul of a sympathetic auditory instinctively interprets. Even in deliberate speech, in exposition, narrative, calm and unimpassioned argument, there are innumerable subtle changes by which corresponding variations of thought are indicated. And when he rises to the region of

emotion, has not nature wedded its own symbols to the whole gamut of feeling—entreaty, passion, pathos, tenderness, grief subdued or unrepressed, remonstrance, anger, scorn, sarcasm, reverence, awe, aspiration, homage, the agony of the penitent, the hope and trust of the believer, the mystical rapture of the saint—has not each of these and a thousand other varieties of feeling its own appropriate form of expression, so that, through the whole continuity of speech or sermon, a speaker can suffuse articulate language with this deeper, subtler, underlying and all-potent language of nature? Lacking this organ of spiritual power a discourse may have every intellectual excellence, but it will fall short of the highest effect. For often

> "Words are weak and far to seek
> When wanted fifty-fold,
> And so if silence do not speak,
> And trembling lip and tearful cheek,
> There's nothing told."

In one word, the ultimate reason for the greater effectiveness of spoken than of written matter is simply this, that the latter is dead and silent, the former quick with the glow and vitality of intelligence and emotion. In certain scientific observations you must eliminate what is called the personal equation; but in good speaking, the personality of the speaker, instead of needing to be discounted, is that which

lends its special value to the result. What reaches the auditor is not thought frozen into abstract form, but thought welling warm and fluent from a living source. In reading a book or report the whole burden of the process is thrown upon the reader. In listening to a spoken address more than half the burden is borne by the speaker; or rather, activity and receptivity become almost indistinguishable. Charged alike with the electric force of sympathy, the minds of speaker and hearer meet and mingle in a common medium of intelligence and emotion.

I must here for the present arrest this discussion, leaving the further treatment of it and of the practical results to be deduced from it for a future occasion. Is good speaking an art that can be taught and learnt, and, if so, what are the best ways of teaching and acquiring it? These are questions with which I cannot now attempt to deal. I shall content myself with remarking that—whilst the faculty of expression is capable of and needs cultivation, and whilst in this as in other arts there is something that can be taught and learnt—it is my opinion that the teaching must have regard mainly to the intellectual substance rather than to the mere elocutionary form. And by the intellectual substance I mean, not merely the knowledge which all education aims to communicate, but the art of reproducing that knowledge in the best way in which, under the conditions of oral address to which

I have adverted, it can be done. These conditions, whilst to some extent coincident with those of literary expression, are, as we have seen, in many respects peculiar to the art of spoken address, and demand a special study and discipline. But without entering at present on the nature of that study and discipline, I venture to express my conviction that with it what may be called the training of the orator ends. To the artifices of the elocutionist I have never been able to attach much importance.

There may indeed be natural defects or acquired bad habits as to manner, voice, accent, etc., which, though genius or commanding ability may triumph over them, in the case of a man of ordinary gifts may prove fatal to success. We may get over a halting, embarrassed, disagreeable delivery for the sake of the originality and interest of the ideas of a powerful mind; but if to commonplace thought be added an awkward, hesitating, unattractive manner, the less a man courts publicity for his oratorical gifts the better. A speaker who has little to say is under a double obligation to say that little well, and it is surprising how much, under the guidance of a competent instructor, by diligent practice, may be made of the most unpromising materials.

But when all this has been conceded, I fall back on the assertion that it is the intellectual discipline mainly which goes to the production of a good speaker,

and that it is only by that discipline that the perfection of form can be reached. Know and feel your subject, and learn how to express it clearly and vividly, and you may leave manner and delivery to take care of itself. Elaborate systems of elocutionary discipline have been devised for the manufacture of pulpit and other orators, but their utility seems to me more than doubtful. I believe, to say the least, that there is a point beyond which artificial elocutionary training is always useless and often noxious. And one reason for this, as Whately and others have pointed out, is that such expedients are only circuitous methods of reaching the end aimed at. They are like teaching a man what muscles he should use in the act of walking, or how he should manage tongue, palate, and lips in the act of speaking. If you ask why such and such tones of voice, gestures, attitudes, should be employed in expressing this or the other thought or sentiment, the only answer that can be given is, that they are the language in which nature teaches us to express them. Then,—is the obvious rejoinder,—why not leave nature to fulfil its own function? Instead of studying and elaborately mimicing the tones and gestures by which joy, sorrow, penitence, hope, love, gratitude, naturally express themselves, or by which a speaker indicates assent, dissent, conviction, entreaty, interrogation, surprise, etc.—a process which not only involves vast labour,

but at the best can be only partially successful,—is not the simpler, shorter, infinitely more effective method to inspire mind and soul with the feelings and sentiments themselves, and let them find their natural vehicle of expression? Suppose we adopted the same artificial expedient in private life, could anything be more ridiculous than to prescribe the emphasis, tones, pauses, gesticulations, by which the parental, conjugal, filial, and other sentiments may be appropriately expressed? How to sharpen or subdue the intonation, how dispose of the hands and put down the foot, when in domestic life we desire to express sentiments the reverse of amicable; what is the proper pitch of voice by which an indignant parent shall indicate his displeasure at the profuse expenditure or other folly of his offspring; or what, on a most interesting and critical occasion for the youth of either sex, shall be the due and fitting degree of tenderness to infuse into eye and voice—I suppose we should make short work with an instructor who sought to prescribe to us on these and similar points. And the maxim which applies to private colloquy is not less applicable to public speaking. Think, feel, be master of your subject, let your imagination and heart be enkindled by it, and the appropriate form will come of itself.

Finally, there is this further objection to all such artifices, that, from their very nature, they frustrate

their own ostensible end. There is an element of simulation in them, where absolute sincerity and simplicity are indispensable to the highest result. They direct a speaker's attention to himself when self-forgetfulness is the first and last condition of power. Especially in religious address, they tend to introduce sham and stageyness where reality is all in all. If a speaker is thinking of himself and not of his subject, of the manner and not of the matter, if his attention is occupied with the modulation of his voice and the aptitude of his gestures, if an undercurrent ambition to be graceful, striking, emphatic, runs through all his fine sentences and simulated emotions, he will be shorn of genuine power. Especially if, as is almost certain to be the case, the audience detects the covert motive, their sense of reality is offended, they feel as if called to participate in an imposture, they become cold, guarded, unresponsive, and the speaker's hold on them is gone. For real, oratorical effect a speaker must never think of producing it. He must lose himself in his subject, *be* for the moment his subject. His speech must, so far as manner is concerned, have the spontaneity, the abandonment, the self-forgetfulness of inspiration. And only then on the part of the auditory will the highest response of a like self-abandonment be yielded. Only then, forgetting everything else—speaker hearers, surrounding accessories—in their interest in the subject, will they be carried along

unresistingly on the swift tide of thought, and feel the keen delight of sympathetic emotion, the simultaneous thrill of feeling that, under the spell of a great master of human speech, sweeps over a whole multitude and blends them into unity.

THE PERSONAL ELEMENT IN TEACHING.

April 13, 1894.

ONE of the great sources of the superiority which, I believe, belongs to academic teaching over instruction got from books and private study lies in what may be called the personal element. As this is a subject on which in the many addresses which on similar occasions I have delivered I have not yet touched, I shall take leave to-day to say a few words on it.

What educational advantages, let me ask, does University teaching possess over private study? Comparing instruction got from books and instruction got from lectures, the former has this obvious advantage, that the instruction which books contain exists, not in a fugitive, but in a permanent form. When, indeed, the end aimed at is only general impression or persuasion, and the substance of the discourse is not beyond the apprehension of a hearer of ordinary intelligence, much is gained and nothing lost by the lecture form. But when the subject calls for close attention and

hard thinking, when the treatment of it involves precise and accurate statement, close and consecutive reasoning and sustained reflection, printed matter has an obvious superiority over oral delivery. In studying a scientific or philosophical treatise the reader can take his own time, pause over a difficult sentence or paragraph, recur to it in the light of what follows, is not hurried along at a rate more rapid than his slow intelligence admits. If the effort of sustained attention becomes too exhausting he can stop when he likes, and renew his reading with a fresh mind.

In other ways, moreover, he is not so much at the mercy of the teacher. Fallacies, showy rhetoric, plausible paradoxes, irrelevant illustrations, which pass unobserved in a rapidly spoken address, are more easily detected on the printed page. Besides, though it is true that many men speak better than they write, the converse is also true, that many a bad or ineffective speaker is a weighty and impressive writer. St. Paul quotes certain candid critics of his as saying that "his letters were weighty and powerful, but his bodily presence weak and his speech contemptible." And it would be easy to adduce instances of men who have made important contributions to the literature of their subject, yet have lacked the teaching power, and whose manner of speech adds to the intrinsic difficulty of the matter. But even if the teacher is equally good with the tongue and the pen, the auditor of a lecture can

never, in some respects, be placed in the same position as the reader. However quick his apprehension, he is subjected to a strain of attention and an effort of memory which is not demanded of the latter.

For these and other reasons it may be plausibly maintained that teaching by lecture is only a survival of a past state of things, when books were few and costly and a great teacher had almost no other access to the popular mind than by oral address. But with the diffusion of literature and the multiplication of books on every subject over the whole range of academical instruction, the student may well be left to get up his knowledge by private study, and the professor, instead of undertaking the superfluous task of communicating orally what may more satisfactorily be got from books, might employ himself in pointing out the best sources of information, and in testing by examination the extent and accuracy of the student's attainments.

But when all this has been said, there are, I think, many considerations in support of the assertion that, notwithstanding the multiplicity of books—treatises, manuals, educational works on all manner of subjects, scientific, literary, philosophical—a place, and an important place, is still left for instruction by oral address. The foregoing arguments lose much of their force when we consider that the alternative is not simply between books and lectures. The question is not whether, if

we had to choose between knowledge got solely from books and knowledge got solely from lectures, we should not give the preference to the former; but whether, with all that books can give us, there is not still an invaluable element of education which can reach us only through living contact with the mind and personality of a teacher who is a master of his subject.

I do not dwell on the obvious fact that there are many branches of our studies here in which the largest and most important part of the knowledge communicated is of a kind that could not be got from books. In the study of the sciences of observation and experiment, the practical work of the laboratory under a competent instructor, if it does not altogether supersede, constitutes an indispensable supplement to the lecture or text-book. And if we think only of general education as an intellectual discipline, of the enlargement of mind to be gained from it, apart from any future professional use to be made of it, it is, I think, impossible to exaggerate the benefit to be got from the practical study of the physical and experimental sciences under the guidance of an able instructor.

In this point of view it is not so much what we learn as how we learn, not the matter but the method that is the important thing. Much of the mere information which the student acquires here may fade away from his mind, but what is not lost is the

training to keenness and accuracy of his powers of observation, the practised ability to see what the facts really are, to grasp their meaning, appreciate their value, discern them in the light of their relation to other facts and phenomena, weigh the force of evidence for conflicting interpretations of them. Now, here we have a result which only the guidance of a living instructor can supply, and which is of inestimable value as a preparation for the future work and conduct of life. We are not all, or even the majority of us, to be scientific experts, but we all of us need for success in life the intellectual habits to which I have referred.

Half the weakness and perversity of mankind arises from men's inability to *see* what is before their eyes, and when they see, to discern what it means. In the business of life there are multitudes who are afflicted with defective vision, who have never learnt to fix their attention, and who in consequence overlook half of what they see, or think they have seen what they have only imagined. There are many also who, in the ever-recurring exigencies of life when the call arises for independent judgment or rapid decision, from the lack of trained habits of observation and inference,—because, in other words, the observing and reasoning mechanism within them has never been habituated to move with readiness and precision—are comparatively helpless and ineffective agents in the work of life. And just that rational gymnastic which such minds

need is that which a thorough discipline in the methods of investigation, the problems, the processes of science supplies.

There are, however, other branches of study which do not belong to the domain of outward facts and phenomena, and in which knowledge is communicated not by means of observation and experiment, but simply by the passing of ideas from mind to mind. And in their case, too, there is an element of instruction and of mental discipline which cannot be got from books, and in which the personality of the teacher plays a large and important part.

In the study of philosophy, of ethics, of psychology, of literature, of history, one important influence, to name no other, which is lost in mere book learning is the quickening of the intellectual life by sympathy with the spirit of the teacher. It is no doubt true, as I have said, that this is a kind of influence the action of which is more palpable in popular oratory than in professorial teaching. Where, as in the pulpit, on the platform, at the bar, in the popular lecture, or political speech, the end aimed at is persuasion and general impression rather than conclusions reached by severe consecutive thought and ratiocination, we all know how greatly the personality of the speaker, the fervour of his manner, the rhetorical skill with which he marshals and emphasizes his arguments, the aptness and elegance of his language contribute to his success.

There is something in good and effective speaking which is distinct from and more than the matter of the speech, and which cannot be reproduced in literary form. In reading a book the whole burden of the process, so to speak, is thrown upon the reader, whereas in listening to the same matter spoken, much of that burden is in a sense borne by the speaker, for a really skilled and able speaker puts himself, as he speaks, in the place of his hearers, apprehends ideas not merely as *he* sees them, but as their minds see them; his utterances express not merely his own views of the subject, but *their* difficulties in apprehending it; not merely his own interest in it, but the reflected interest awakened in their minds by his exposition of it. Thus activity and receptivity become in the process almost indistinguishably blended, and the mind of speaker and hearer, charged alike with the electric force of sympathy, meet and mingle in a common medium of intelligence and emotion.

Now, it is no doubt true that in a scientific or philosophical lecture, there is little room for the graces of oratory, and that emotion would even be a hindrance rather than a help to the apprehension of an abstract principle or a closely reasoned train of thought. Yet, besides the great advantage of the guidance of a living instructor who can see, as a book cannot, whether he is understood or not, who can ascertain by examination where we have failed to grasp his meaning, who

can save time by explaining difficulties over which we might have puzzled for hours, who can watch our progress from week to week and by skilful criticism show us where our weakness lies, and who can, by the proper admixture of commendation and reproof, stimulate us to the highest exercise of our powers,—besides all this discipline which it is the peculiar function of a skilful teacher to exert, there is not lacking to the lectures of such a teacher something of that indefinable sympathetic influence and inspiration of which I have spoken, and which may be said to be to mere book learning as the living spirit to the dead letter. A really good teacher, even of the most abstruse subjects, is not simply the mechanical medium through which the written matter of a lecture is reproduced in articulate speech. He is for the moment his subject vitalized, recreated, inspired with the inner power of fresh and living thought, of ideas made alive by passing through and absorbing a human intelligence.

And if without presumption I may in this presence adduce a lesson from my own humble experience, I venture to express the opinion that this element of a lecturer's power will be the more potent in the measure in which he is independent of his manuscript. In one of his dialogues Plato makes Socrates defend the thesis that in the teaching of philosophy speech is superior to writing. "I cannot help feeling," says he, "that writing bears an unfortunate resemblance to painting; for

the creations of the painter have the attitude of life, and yet if you ask them a question they preserve a solemn silence. And the same may be said of (written) speeches. You might imagine they had intelligence, but if you want to know anything or put a question to them, the speaker (*i.e.* of written words) always gives one unvarying answer. May we not imagine another kind of speaking far better than this and having greater power —viz., an intelligent writing which is graven on the soul of him who learns and which can defend itself—the word of knowledge which has a living soul, of which the written word is properly no more than an image." Under the countenance of such an authority I may venture to say that the repetition of the same written lectures from year to year involves a loss of power, sometimes, if I can trust my own observation, an almost intolerable experience to both teacher and taught. Whereas when, putting aside or only making partial use of his manuscript, the lecturer speaks from a fresh review and recasting of his ideas with all the new light and modification suggested by reading and reflexion, the new interest awakened in his own mind reflects itself in the quickened and lively intelligence of the hearers. Something the lecture may lose as regards precision of statement and nicety of expression, but what it loses in form it gains in power—the power which pertains to the man who is not reading but thinking aloud, not trying to galvanize an effete and

lifeless organism, but letting living thought shape itself into new and living form.

In the remarks I have now made on the special advantages of University life, I have viewed it only in one particular aspect, that which relates to the personality and influence of the teacher. But I should like to add, in conclusion, a single word on another and more general point of view, in which you, who have reached the end of your undergraduate course, are specially concerned. We talk of College work as a preparation for our future life, and so it is. But there is a sense in which it may be said to derive a singular value, even in that respect, from its unlikeness to the life on which you are soon to enter, from the very contrast which obtains between the standard of merit which prevails here, the ends which in this place we aim at, the interests and ambitions that affect us, and those which dominate and largely influence men's minds in the various spheres of activity which await you. Society is not yet organized, and probably never will be, on the principle of honour and success only to the ablest and best. Money, birth, rank, social position, even in the most civilized communities, call forth an adventitious deference, and showy but superficial attainments often win a success which is denied to solid merit. No existing community, for instance, is superior to the vulgar respect for wealth, a respect mistaken and irrational even where the

possessor has been the architect of his own fortunes, still more foolish when he is only the inheritor of what other men by their cleverness or industry have won. Even the most democratic societies are not strangers to the artificial homage paid to rank and titles. And so far from knowledge and culture being regarded with universal respect, we have even witnessed in our day a thing so strange as the glorification of ignorance, and an appeal on the most difficult social and political questions taken from educated and disciplined opinion to unenlightened and uncultured instinct.

It is true, indeed, that even in the most unfavourable circumstances ability of a very high order, genius, and commanding intelligence are likely to win their way in the world; but, apart from such exceptive cases, place and preferment are too often determined by arbitrary and accidental conditions, and pretension and push succeed where modest merit goes unrewarded. Now it is, I think, an immense advantage of University education as a discipline of mind and character, that at an early period of life, ere we have entered on the struggle and stress of life, we should for a term of years be members of a society in which the sole bond of union lies in the things of the mind, in which the standard of merit is a purely intellectual one, and all arbitrary grounds of distinction are, for the time at least, in abeyance. It is the glory of our

Scottish Universities that they have never been places of education for a class, that no costly arrangements render access to them possible only for the rich or well-to-do, and that when once he has crossed their doors a young man finds himself in a community where intellectual resource is the only wealth that wins respect, brain power the only power that tells, and where honour and distinction await the ablest and worthiest, and await these alone. That surely is some approximation to an ideal society in which arbitrary and accidental claims to superiority are of absolutely no account, in which the idle, the superficial, the incompetent, will not for any outward reason have a shadow of respect paid to them, and genuine intellectual power and application are sure to be recognized and honoured.

And if to purely intellectual qualities we add other and even higher qualities which go to constitute the peculiar genius and spirit of University life, and which, I rejoice to believe, animate, if not all, at least the great majority of those whom I address—such as a high sense of honour, self-respect, superiority to low motives, and ungenerous actions, scorn of meanness and baseness—if this be so, I think I have made out my point that University life, by reason in some measure of the very contrast between its standards of excellence and those which too often obtain in the world, forms for those who imbibe its spirit an

invaluable discipline of character. It is this contrast, I think, which for many of us for whom student life is only a distant retrospect, makes us cherish the recollection of it with an abiding interest, and lends to this stage of our history, to its intellectual enthusiasms, its generous rivalries, its unconventional freedom, a singular and ineffaceable charm. It is well for us that it should be so, and well will it be for you, may I not say, if in the coming years and long after the days of youth have passed away, you preserve and carry into the business, the cares and trials of the world, something of the truest and best spirit of your college life.

ON GENERAL AND PROFESSIONAL EDUCATION.

April 13, 1897.

I HAVE more than once on similar occasions adverted to a problem which is one of the most important, as it is one of the most difficult, in the science of education—namely, how to limit the range of study without producing intellectual narrowness—how to contract the field of thought without contracting the mind of the thinker. Limitation in the first sense we must have, if only from the vast and ever-increasing extent of the field of knowledge, and the more and more definite specialization of its various departments. Selection on the part of the individual student is inevitable, and the plausible solution which occurs to many minds is that, seeing he cannot attempt to know everything, he should be guided in what he selects or omits by his individual aptitudes and by that which those aptitudes should determine—the special calling or career in life to which he is destined.

The time has been when the notion of universal knowledge, the attempt to gain something more than a superficial acquaintance with all the various departments of human thought, was not so absurd as now it seems to be. When books were few and life more leisurely, when the vast domain of physical science had scarcely begun to be explored, and even its principles and methods were not understood; when the sciences of philology and of historical criticism were yet in their infancy; when political economy, sociology and kindred sciences had not yet begun to be, it was possible, at least for some minds, to grapple not unsuccessfully with almost all the main subjects of human thought, and to become conversant with every important work in the whole range of literature. But we have fallen on other and different times. In our day it is impossible, not merely for the average student, but for even those of the greatest ability and application, to advance far in the work of acquiring knowledge without discovering that limitation and condensation are the conditions of success. Encyclopædic knowledge can now be only another name for shallowness and superficiality. To attain the highest proficiency in any one branch of literature or science—or a fairly accurate acquaintance with two or three—the most ambitious student must be content to be comparatively ignorant of everything else, and to look on whole departments of thought

and research as for him practically proscribed. To a certain extent we must all be either specialists or amateurs; we must make our choice between real and accurate, but limited, knowledge and mere dilettantism.

Since, then, limitation is inevitable, on what principle shall we proceed in determining what is to be excluded and what retained? The answer which to many seems to be beyond dispute is that the direction and limitation of our studies should from the very outset be determined by the use we are to make of them in our future life. If we cannot learn everything, should we not, in what we do learn, have regard mainly, if not exclusively, to the account to which our acquirements can be turned in the particular calling or profession to which we are destined? For most of us the exigencies of life are too pressing, the period of education too brief, to indulge in high-flown schemes of general culture. The result aimed at in our case cannot be merely to weave out of the raw material of mind the best possible specimen of educated intelligence that can be extracted from it, but to produce what would yield robust service in a particular line of work, make us capable men of business, clever, well-informed, and successful lawyers, doctors, divines. And this principle, it would be said, is becoming more and more recognized in our scheme of University education, in which not only do professional studies occupy a large and increasing space, but by the intro-

duction of new subjects into the non-professional or arts curriculum, a wider option in accordance with individual aptitudes and the future vocation of the student has been introduced.

But though there is no doubt a measure of truth in this popular and common-sense solution of the problem, there are one or two things to be considered before we adopt it as a complete and adequate solution. Education cannot be mainly guided by professional aims, because, in the first place, education is needed to guide us in the selection of a profession, to enable us to know what our special calling or profession is; in the second place, to protect us against the narrowing influence of all, even the so-called liberal professions; and, in the third place, to fit us for important social duties which lie outside of every man's professional work.

A man's education cannot be determined altogether by regard to his future calling, seeing that it is one end of a good education to enable a man to find out what his true vocation is. Though it is often determined by accident, the selection of one's calling in life is at once one of the most important and one of the most difficult decisions which a man can form. Perhaps the fair portion of my auditory will forgive me for saying that it is a choice as critical as that which determines a certain very close relationship in life; and I do not know whether it is not often made

with as little reflection in the one case as in the other, and whether the consequences of a wrong choice are not as fatal and sometimes as irremediable.

Our usefulness, success, and happiness in life depend unquestionably not a little on the measure in which we are in harmony with our place and work in the world. How then, the question arises, shall we find out what that place and work is? For one thing this, I think it will be obvious, is a question the right answer to which implies a measure of judgment, forethought, reflexion, and a range of information and intellectual experience such as presuppose and are the best results of a liberal education.

We do not come into the world each ticketed off by any outward mark for our special destination. There may perhaps be some minds of such marked individuality as to betray at a very early period of life, there may be even infant prodigies, in whom the future poet or artist, the coming orator or statesman can be discerned ere he has well left the nursery; but I fear that such forecastings are in general due only to partial or parental observations, or to the biographer's tendency to read back the success of subsequent life into the incidents of childhood. To an impartial observer, so far as mental characteristics go, all babies are very much alike. The inarticulate vocal manifestations of the future poet or musician are no more melodious than those of his tuneless brother. The

incipient divine or philosopher does not foreshadow his career in a premature air of thoughtful gravity impressed on his countenance. Even when we come to the stage at which education begins—a few rare instances of precocity excepted—individual aptitude is only very slightly discernible. It is not till a later, in the case of some of the best minds a much later period—viz., when the schoolboy stage is past, and that of student life has considerably advanced—that a youth can be said to be possessed of the materials by which the choice of a career can be wisely determined; in other words, of that knowledge of the various branches of human thought, and that experimental knowledge of himself and of the direction and limits of his powers, by which he becomes capable of such a decision as to his future destiny.

And so in the process of education there is room for an intermediate or transition stage between schoolboy discipline and strictly professional culture. There are many minds in which the intellectual instincts and aptitudes are slow to betray themselves; and whether the latent genius be for letters or art or science or the industrial arts or practical life or politics, it has been only after the rugged propædeutic of school discipline has been long left behind, and the wonder and delight of the world of thought has become a growing experience, and the free play

of their powers under the discipline of a general, many-sided culture has begun to be felt, that they have come to discern where in the wide field of human activity lies their special vocation.

Another reason, I have said, why in education we should not have regard exclusively or mainly to the student's future calling or profession, is that it is one great aim of education to protect us from the narrowing influence of all, even of the so-called liberal, professions. I must pass by this point, however, with only a single remark. The division of labour, as has been often pointed out, is subject to this drawback, that it tends to sacrifice the full development of the individual to the exigencies of society. Professional or technical excellence would seem to be incompatible with symmetry and width of culture. It often leads not merely to imperfect but also to unequal or one-sided development. This is most obvious in the case of manual or mechanical callings. Each trade or craft exercises constantly one member or faculty or class of faculties, leaving the others comparatively inactive—runs the whole physical energy into one limb or organ, and so distends it to exaggerated dimensions, whilst the others are proportionately dwarfed or enfeebled

And the same is in a measure true of intellectual work. It is the tendency of each of the various professions to call into play a limited class of mental activities, to dam up the spiritual force that is in a

man into a particular channel, and so leave the non-professional regions of his nature comparatively dry and barren. Not only are most men apt to form an exaggerated estimate of the importance of that which is their daily occupation, but they get the stamp of the shop impressed upon them, and carry their technical views and principles of judgment about with them wherever they go. There are many men one meets in society whose only alternative is to be technical or dull, to be dumb or learnedly loquacious. The narrowing tendency in question shows itself by engendering in the mind a host of class prejudices, by indisposing it for wide, impartial, tolerant views; by depriving it of flexibility and the capacity to look at things from the point of view of other minds and the wider one of reason itself; finally, by breeding in us a professional selfishness—a tendency to view all measures and plans of improvement, not by their bearing on the general welfare, but on the interests of a class, so that the first question is not—Is this opinion true, is this political or ecclesiastical reform just, will it redress some crying wrong, hinder or help the national weal? but—Will it promote or hinder the dignity, power, and wealth of the order to which I belong? Is our craft in danger and the shrine of the great goddess Diana, whom all Asia and the world worship?

I shall not prosecute this part of our subject any further; but enough, I think, has been said to show the

importance of a general as distinguished from a special and professional training. As the pettiness of mind incident to life in a small circle is best corrected by foreign travel, so the remedy for intellectual narrowness is to be free of the wide world of thought. Converse with many cities and men disabuses the mind of the parochial standard of judgment. So the best cure for intellectual narrowness is the capacity to escape from the confined atmosphere of class or craft into the wide domain of letters, of science, of philosophy, of art. The physician or lawyer who is a classical scholar, or at any rate conversant with the treasures of either ancient or modern literature, capable of finding purest enjoyment over the pages of its poets, historians, philosophers, is not likely to sink into a professional hack. The divine who is also a man of scientific or scholarly tastes is at least not likely to settle into the vulgar zealot, absorbing his soul in the petty politics of a sect or regarding its standards of orthodoxy as pillars round which the universe revolves. Be it yours, in this ancient home of learning, to seek after that preservative from narrowness which its studies afford.

One of the most precious characteristics of such institutions as this is what I may venture to designate the unworldliness of the spirit which pervades them. It is surely no little gain for society that at the impressible stage of transition between boyhood and manhood young men should be made to breathe for a

term of years an intellectual atmosphere other and purer than that which but too often pervades the world on which they are about to enter—that they should for a time be members of a society in which the scramble for material gain, the fierce and often vulgarizing competition for worldly preferment, are as yet things unknown. To say this, implies no high-flown, sentimental disparagement of the aims and ambitions that play so large a part in the world, and lend movement, activity, and interest to the drama of life. But it is not to the love of money or the love of social advancement, or even mainly to the love of honour and reputation, that we here appeal. There is a passion purer, loftier, and, in those who are capable of its inspiration, more intense than any of these—the love of truth, the passion for knowledge and intellectual attainment for its own sake, and it is our glory and boast that it is this which constitutes the distinctive characteristic, the very breath and life of such places as this.

Poor and vain would be the result of years you have passed in this place of study if, beyond the hope of future success in the world, beyond all ulterior aims and ambitions, there has not been awakened in you some breath of the genuine student's ardour, some sense of the worth and joy of intellectual effort for its own sake. On the other hand, if you have learned here, apart from the use of your studies as a preparation for

your work in the world, to know with appreciative sympathy something of what the world's greatest minds have thought or its sweetest poets have sung, or of what in ancient or modern times its greatest workers have done for the progress of the race; or if there has been put into your hands the key by which science unlocks the secrets of nature, so that a treasure of mental resource will all through your future life be open to you; still more, if you have gained or begun to gain here the precious possession of disciplined faculties, of a trained intelligence, strength of judgment, refinement of taste, and habits of application and self-command,—then, be your future career what it may—obscure, unrewarded, unknown to fame, or brilliant and successful as the most sanguine imagination can picture it—not in vain for you will these eventful years have passed. For you will have got from them that which in all the future will furnish you with an escape from the pettiness and narrowness, the vulgarizing and wearing anxieties that beset most of us amidst our daily work; that will provide you with new uses for wealth and property if they come to you, and, on the other hand, next to religion, will prove the truest consolation of adversity and disappointment, of worldly care and sorrow.